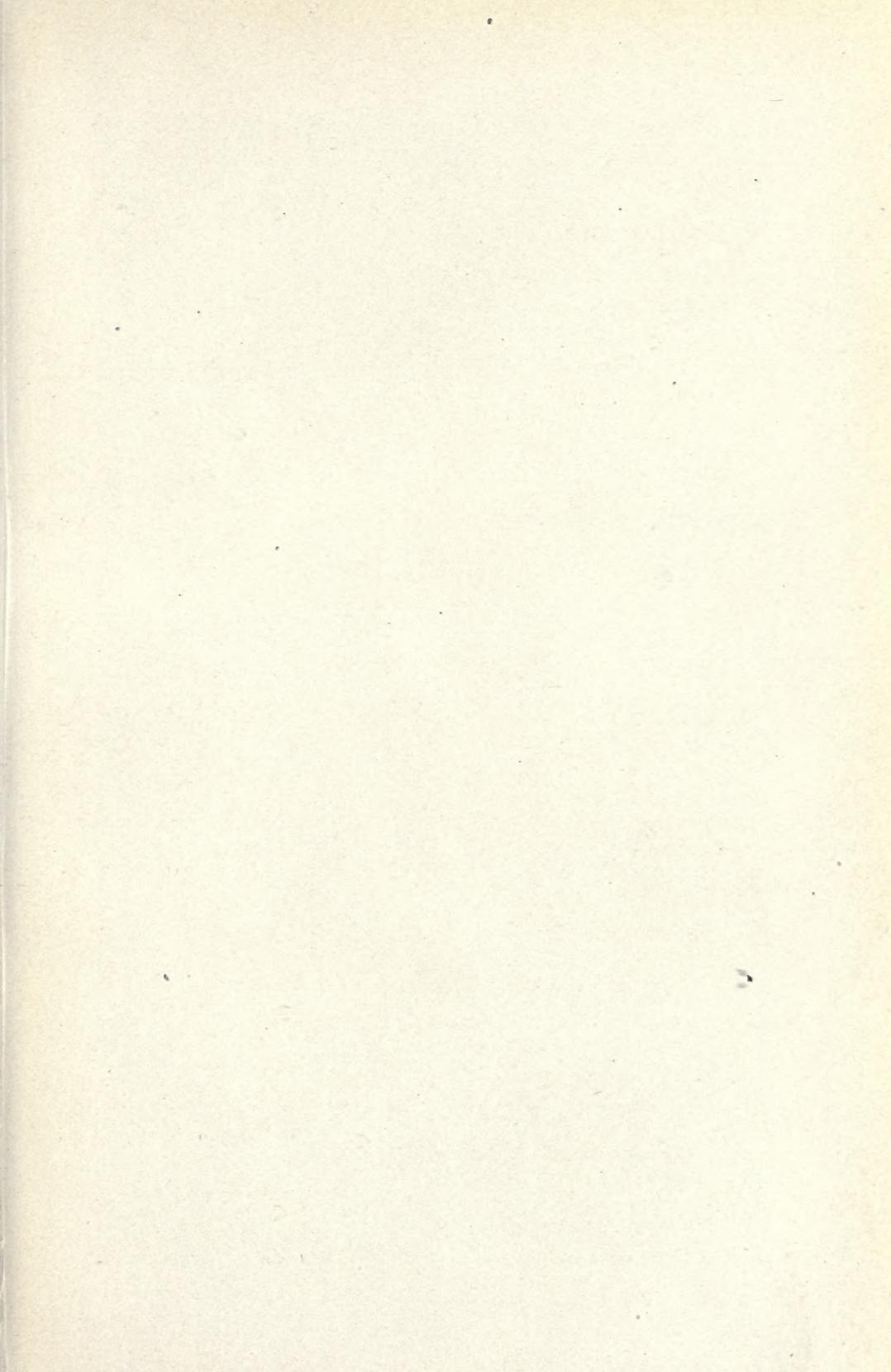
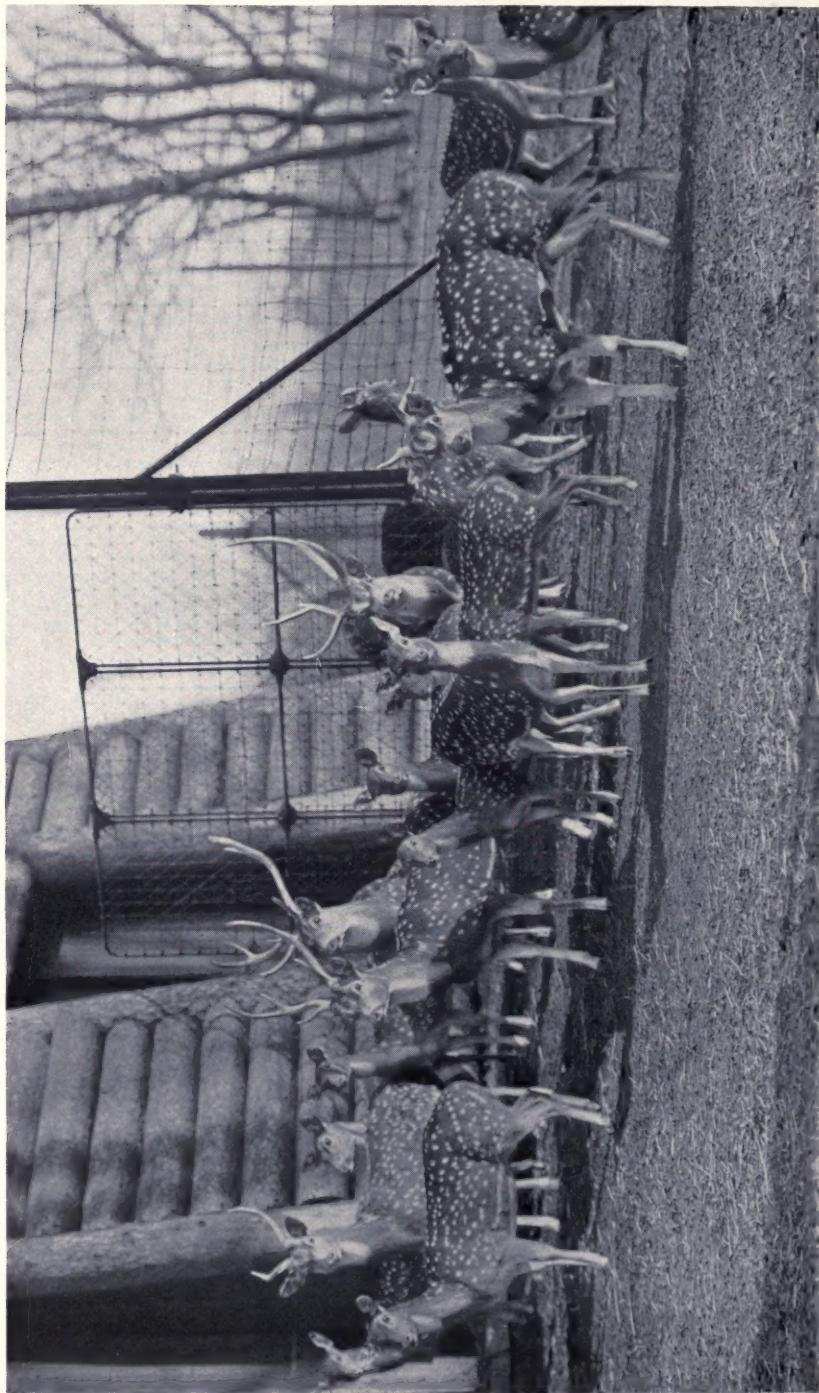




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AXIS DEER IN THE ZOOLOGICAL PARK

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EIGHTEENTH ANNUAL REPORT
OF THE
NEW YORK
ZOOLOGICAL SOCIETY

CHARTERED IN 1895

OBJECTS OF THE SOCIETY

A PUBLIC ZOOLOGICAL PARK
THE PRESERVATION OF OUR NATIVE ANIMALS
THE PROMOTION OF ZOOLOGY

1913



NEW YORK
OFFICE OF THE SOCIETY, 11 WALL STREET
JANUARY, 1914

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 HARD, ANSON W.,
 HARMON, MRS. CLIFFORD,
 HARPER, LATHRCP C.,
 HARRIMAN, MRS. HERBERT M.,
 HARRIMAN, MRS. J. ARDEN,
 HARRIMAN, MRS. J. BORDEN,
 HARTSHORNE, J. M.,
 HARVEY, ELI,
 HASSLACHER, JACOB,
 HASTINGS, MRS. THOMAS,
 HAVEMEYER, JR., H. C.,
 HAVEMEYER, J. C.,
 HAVEMEYER, T. A.,
 HAVEN, JR., GEORGE G.,
 HAVEN, J. WOODWARD,
 HAVENS, ALBERT G.,
 HAWE, MATTHEW,
 *HAYES, MRS. R. TOMERS,
 HAYNES, WILLIAM DEFOREST,
 HECKER, DR. ANTON J.,
 HECKSCHER, MRS. AUGUST,
 HEDGES, JOE E.,
 HEIMAN, E.,
 HEINTZ, JOHN C.,
 HENCKEN, HANCKE,
 HENGSTLER, LOUIS,
 HENNING, EMIL F.,
 HEPBURN, A. BARTON,
 HEPBURN, MRS. A. BARTON,
 HERMANN, BERNARD F.,
 *HERMANN, FERDINAND,
 HERRICK, HEROLD,
 HERTER, MRS. ALBERT,
 HERTER, MRS. CHRISTIAN A.,
 HERMANN, MRS. FERDINAND,
 HESS, SELMAR,
 *HEWITT, MRS. ABRAM S.,
 HEWITT, HERBERT H.,
 HEXAMER, A. P.,
 HILL, E. B.,
 HILL, FRANK B.,
 HILL, ROBERT C.,
 HILLS, DR. ALFRED K.,
 HINCHMAN, WALTER,
 HIRSCH, CHARLES S.,
 HOCHSCHILD, BERTHOLD,
 HOE, MRS. ROBERT,
 HOFFMAN, CHARLES FREDERICK,
 HOFFMAN, MISS M. U.,
 HOFFMAN, MRS. WILLIAM M. V.,
 HOGG, JAMES A.,
 HOLBROOK, MRS. EDWARD,
 HOLBROOK, MRS. F. S.,
 HOLDEN, EDWIN R.,
 HOLLINS, HENRY B.,
 HOLT, HENRY,
 HOLTER, MRS. E. O.,
 HOLZMAISTER, LOUIS V.,
 HOOLEY, EDWIN S.,
 HOOKER, DR. RANSOM,
 HOMES, HENRY F.,
 HOPPIN, MISS FRANCES,
 HOPPIN, HAMILTON L.,
 HOPPIN, JR., WILLIAM W.,
 HORNADAY, MRS. J. C.,
 HOSKIER, H. C.,
 HOTCHKIN, W. B.,
 HOWE, WIRT,
 HOWELL, T. A.,
 HOWLAND, HENRY E.,
 HOWLAND, MRS. HENRY E.,
 HOYT, COLGATE,
 HOYT, MRS. COLGATE,
 HOYT, MRS. HENRY R.,
 HOYT, MRS. JESSE,
 HOYT, JOHN S.,
 HOYT, MISS VIRGINIA SCOTT,
 HOYT, WALTER S.,
 HUMPHREYS, MRS. EDWARD WALSH,
 HUNN, ARTHUR B.,
 HUNT, MRS. CHARLES WARREN,
 HUNT, MRS. LEIGH,
 HUNTINGTON, MRS. ARCHER M.,
 HUNTINGTON, MRS. ROBERT P.,
 *HUNTINGTON, REV. W. R.,
 HUNTMAN, REV. GERARD H.,
 HUPFEL, J. CHRISTOPHER G.,
 HUSSEY, WILLIAM H.,
 HUSTED, MISS M. KATHARINE,
 HUSTED, JR., SEYMOUR L.,
 HUTCHINS, AUGUSTUS SCHELL,

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HUTCHINSON, CARY T.,
 *HUTTER, KARL,
 HUYLER, C. D.,
 HUYLER, F. D.,
 HYDE, MRS. A. FILLMORE,
 HYDE, AUGUSTUS L.,
 HYDE, B. T. BABBITT,
 HYDE, DR. FREDERICK E.,
 HYDE, MRS. WILLIAM H.,
 HYDE, W. TRUSLOW,
 IJAMS, J. T.,
 INCHES, GEORGE B.,
 IRONS, HENRY C.,
 IRVIN, MRS. RICHARD,
 ISELIN, C. O'DONNELL,
 ISELIN, C. OLIVER,
 ISELIN, MISS GEORGINE,
 ISELIN, JOHN H.,
 ISELIN, MISS LOUISE M.,
 ISELIN, WILLIAM E.,
 ISELLIN, MRS. WILLIAM E.,
 ISELLIN, WILLIAM O'DONNELL,
 ISHAM, CHARLES B.,
 ISHAM, SAMUEL,
 ISHAM, WILLIAM B.,
 JACKSON, DR. GEORGE THOMAS,
 JACKSON, R. HALSEY,
 *JACKSON, SAMUEL MACAULEY,
 JACOB, LAWRENCE,
 JACOBI, DR. A.,
 JACOBUS, JOHN S.,
 JACQUELIN, HERBERT T. B.,
 JAMES, JR., HENRY,
 JAMES, DR. ROBERT C.,
 JAMES, MRS. WALTER B.,
 JARVIS, MRS. S. M.,
 JENKINS, A. W.,
 JENKINS, MRS. HELEN H.,
 JENKINS, WILLIAM B.,
 JENNINGS, FREDERICK B.,
 JENNINGS, PHILANDER R.,
 JENNINGS, SIDNEY J.,
 JENNINGS, WALTER,
 JESUP, RICHARD M.,
 JOHNES, WILLIAM FOULKE,
 JOHNSON, F. COIT,
 JOHNSON, GUY B.,
 JOHNSTON, J. HERBERT,
 JOHNSTON, WILLIAM J.,
 JONES, MRS. A. MASON,
 JONES, MISS BEATRIX,
 JONES, MRS. CADWALADER,
 JONES, H. BOLTON,
 *JONES, DWIGHT A.,
 JONES, LEWIS Q.,
 JONES, TOWNSEND G.,
 JUDSON, H. I.,
 KAHN, LOUIS,

KAHN, DR. ROBERT J.,
 KAMENA, WILLIAM L.,
 KANE, MRS. DeLANCEY,
 KANE, MISS LOUISA LANGDON,
 KAST, DR. LUDWIG,
 KAUTZ, EULENBERG, MISS P. R.,
 KEAN, HAMILTON FISH,
 KEAN, MRS. HAMILTON FISH,
 KEECH, FRANK B.,
 KEELER, MRS. C. B.,
 KEELING, MRS. WHELDON,
 KEEN, FRANK H.,
 KEIL, HENRY F.,
 KELLOGG, MRS. CHARLES,
 KELLY, HORACE R.,
 KEMP, ARTHUR T.,
 KENNEDY, EDWARD G.,
 KENNEDY, MRS. JOHN STEWART,
 KENT, EDWIN C.,
 KEPPEL, DAVID,
 KERNAN, MRS. WALTER N.,
 KEUFFEL, W. G.,
 KEYES, MRS. CHARLES W.,
 KEYSER, MRS. SAMUEL,
 KIDDER, JAMES HATHAWAY,
 KIMBALL, ALFRED R.,
 KING, AUGUSTUS F.,
 KING, BEVERLY S.,
 KING, MISS ETHEL,
 KING, JAMES GORE,
 KING, MRS. J. HOWARD,
 KING, MRS. LEROY,
 KINGSLAND, MRS. WILLIAM M.,
 KINNEY, MORRIS,
 KINNEY, WARREN,
 KINNEY, MRS. WARREN,
 *KINNICUTT, DR. FRANCIS P.,
 KIP, W. RULOFF,
 KITCHING, FRANK W.,
 KITTREDGE, SAMUEL DANA,
 KITZ, JOSEPH,
 KLAW, MARC,
 KNAPP, ARNOLD,
 KNAPP, JR., MRS. HARRY K.,
 KNAPP, MRS. JOSEPH PALMER,
 KNIGHT, CHARLES R.,
 KNOEDLER, ROLAND F.,
 KOEHLER, H. C.,
 KOHLMAN, CHARLES,
 KOHLSAAT, MISS EDITH M.,
 KOLB, GUSTAVE F.,
 KOLE, JR., GEORGE C.,
 KOLB, FREDERICK,
 KREMER, WILLIAM N.,
 KREMER, MRS. WM. N.,
 KRUNSCHIED, C. D.,
 KUEMPEL, MAX,
 KUNHARDT, HENRY R.,

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KUSER, JOHN DRYDEN,
 KUSER, JOHN L.,
 KUTTROFF, ADOLF,
 LACOMBE, HON. E. HENRY,
 LADENBURG, MRS. ADOLF S.,
 LAGAI, DR. GEORGE,
 LAIMBEER, JR., JOHN,
 LAING, EDGAR H.,
 LAMBERT, DR. ALEXANDER,
 LAMBERT, DR. A. V. S.,
 LAMBERT, DR. SAMUEL W.,
 LAMONT, MRS. THOMAS WM.,
 LANDAUER, I. N.,
 LANDON, MRS. E. H.,
 LANDON, FRANCIS G.,
 LANE, EDWARD V. Z.,
 LANE, JAMES WARREN,
 LANE, WOLCOTT G.,
 LANGDON, JR., WOODBURY G.,
 LANGMANN, DR. GUSTAV,
 LANGE, MISS CARMEN,
 LANGLOTH, J.,
 LANIER, MRS. JAMES F. D.,
 LAPHAM, MRS. JOHN J.,
 LATTING, CHARLES P.,
 LAUTERBACH, MRS.,
 LAWRENCE, JOHN BURLING,
 LAWRENCE, JOHN L.,
 LAWRENCE, NEWBOLD T.,
 LAWRENCE, TOWNSEND,
 LAWRENCE, W. V.,
 LEA, CHARLES M.,
 LEARNED, WALTER,
 LEDLIE, GEORGE,
 LEDOUX, DR. ALBERT R.,
 LEDYARD, EDGAR M.,
 LEDYARD, MRS. LEWIS C.,
 LEE, PROF. FREDERIC S.,
 LEE, MRS. FREDERIC S.,
 LEE, J. BOWERS,
 LEE, WILLIAM H. L.,
 LEFFERTS, MARSHALL C.,
 LEHMAIER, JAMES M.,
 LELAND, WILFRED C.,
 LESHER, A. L.,
 LETKEMANN, H. V.,
 LEVY, EMANUEL,
 LEWIS, MRS. AUGUST,
 LEWIS, FREDERIC ELLIOTT,
 LEWIS, PERCY PYNE,
 LEWIS, DR. WILLIAM J.,
 LEWISJOHN, ADOLPH,
 LIEBER, HUGO,
 LINCOLN, LOWELL,
 LITCHFIELD, E. HUBERT,
 LITCHFIELD, EDWARD H.,
 LIVINGSTON, WILLIAM S.,
 LOBENSTINE, WILLIAM C.,
 LOCKWOOD, ERNEST M.,
 LOGAN, FRANK J.,
 Loomis, Guy,
 Lord, Mrs. GEORGE DEFOREST,
 LOUNSBERRY, MRS. RICHARD P.,
 LOW, ETHELBERT IDE,
 LOWE, WILLIAM,
 LOWELL, MISS CARLOTTA RUSSELL,
 LOWELL, JAMES B.,
 LOWNDES, THE REV. ARTHUR, D. D.,
 LUCAS, DR. FREDERIC A.,
 LUCHSINGER, JACQUES,
 LUCE, MRS. HARRY J.,
 *LUDEKE, A.,
 LUDINGTON, C. H.,
 LUDLOW, REAR-ADMIRAL NICOLL,
 LUMMIS, MISS ELIZA O'B.,
 LUEDER, A.,
 LUSK, PROF. GRAHAM,
 LUTTGEN, WALTHER,
 LYMAN, FRANK,
 LYON, EMORY S.,
 McALEENAN, JOSEPH,
 McALPIN, MRS. CHARLES W.,
 McALPIN, JR., MRS. D. HUNTER,
 McALPIN, GEORGE L.,
 McBURNEY, CHARLES I.,
 McBURNEY, HENRY,
 McCAGG, LOUIS B.,
 McCALL, RICHARD,
 McCOON, MISS EDITH,
 McCREERY, ROBERT S.,
 McCULLOH, J. S.,
 McCUTCHEON, JAMES,
 McGUIRE, JOSEPH H.,
 McKEEVER, J. LAWRENCE,
 McKIM, JOHN A.,
 McKIM, LEROY,
 McLANE, THOMAS L.,
 McLEAN, JAMES,
 McLEAN, MARSHALL,
 McMURTRY, G.,
 MACFARLANE, WALLACE,
 MACY, GEORGE H.,
 MAGEE, JOHN,
 MAGEE, F. ROBERT,
 MALE, FRANCIS, S.,
 MALI, PIERRE,
 MALI, MRS. PIERRE,
 MANICE, MRS. WILLIAM,
 MANN, WILLIAM D'ALTON,
 MAPES, JR., DANIEL,
 MAPES, ERNEST S.,
 MARBURY, MISS ELIZABETH,
 MARCUS, GEORGE E.,
 MARKHAM, WALTER,
 MARKOE, HARRY,
 MARKOE, DR. J. W.,

MARSH, C. P.,
 *MARSHALL, CHARLES H.,
 MARSTON, EDWIN S.,
 MARTIN, JR., BRADLEY,
 MARTIN, HOWARD T.,
 MARTIN, JOHN S.,
 MARTINEZ, MIGUEL R.,
 MASON, WILLIAM,
 MASTEN, ARTHUR H.,
 MASTERS, Miss,
 MATHER, SAMUEL,
 MATHEWS, THOMAS,
 MATTHEW, DR. W. D.,
 MAYER, JESSE,
 *MAYER, JOHN,
 MAYER, MRS. JOSEPH B.,
 MAYNARD, DUFF G.,
 MAYNARD, MRS. WALTER E.,
 MEEKER, HENRY E.,
 MEEM, JAMES C.,
 MEHL, HENRY,
 MELLEN, CHARLES S.,
 MENN, HOWARD,
 MERRITT, HENRY C.,
 MEYER, DR. GEORGE W.,
 MEYER, MISS HELOISE,
 MEYROWITZ, EMIL B.,
 *MILBANK, ALBERT J.,
 MILBURN, JOHN G.,
 MILLER, MRS. CHARLES E.,
 MILLER, ROSWELL,
 MILLET, MRS. F. D.,
 MILLIKEN, S. M.,
 MILLS, ABRAHAM G.,
 MILLS, ANDREW,
 MILLS, FREDERIC C.,
 MILMINE, C. E.,
 MONTANT, ALPHONSE,
 MONTGOMERY, CARLETON,
 MONTGOMERY, RICHARD M.,
 MOORE, CASIMIR DE R.,
 MOORE, JR., CHARLES ARTHUR,
 MOORE, MISS FAITH,
 MOORE, MISS K. T.,
 MOORE, MRS. RUSSELL WELLMAN,
 MOORHEAD, HORACE R.,
 MORAWETZ, VICTOR,
 MORGAN, MISS ANNE T.,
 MORGAN, MISS C. L.,
 MORGAN, MRS. EDITH P.,
 MORGAN, EDWIN D.,
 MORGAN, MRS. J. B.,
 MORGAN, MRS. J. PIERPONT,
 MORGAN, JUNIUS S.,
 MORGAN, MRS. JUNIUS S.,
 MORGAN, PROF. THOMAS H.,
 MORGAN, WM. FELLOWES,
 MORGAN, JR., WILLIAM FORBES,
 MORRIS, DAVE H.,
 MORRIS, GOUVERNEUR,
 MORRIS, JOHN JACOB,
 MORTIMER, RICHARD,
 MORTON, A. L.,
 MORTON, MRS. HENRY SAMUEL,
 MOSLE, A. HENRY,
 MOTLEY, JAS. M.,
 MOTT, HENRY C.,
 *MOTT, JOHN BOWNE,
 MOTT, MRS. VALENTINE,
 MOWBRAY, H. SIDDONS,
 MUELLER, CHARLES F.,
 MUHLFELD, FRANK J.,
 MULLER, WILLIAM,
 MUNROE, HENRY W.,
 MUNSEY, FRANK A.,
 MURGATROYD, JOHN,
 MURRAY, MISS LOUISE,
 MUURLING, T. J. R.,
 MYERS, WILLIAM S.,
 NAEGELI, ROBERT,
 NEILSON, DR. HOWARD S.,
 NEILSON, WALLACE PLATT,
 NEILSON, D. D., REV. WILLIAM H.,
 NELSON, JAMES W.,
 NESMITH, JAMES,
 NEUMOGEN, M. L.,
 NEUMOGEN, MRS. M. L.,
 NEWMAN, HUGO,
 NICHOLS, ACOSTA,
 NICHOLS, JOHN W. T.,
 NICKERSON, HOFFMAN,
 NILES, MISS FLORILLA,
 NILES, ROBERT L.,
 NOBLE, ALFRED,
 NORRIE, MISS MARY,
 NORTH, GEORGE B.,
 NORTON, GEORGE F.,
 NOYES, MRS. HENRY D.,
 OBERMAYER, CHARLES J.,
 O'CONNELL, DR. J. H.,
 OCHS, ADOLPH S.,
 OFFERMAN, JOHN,
 OGDEN, CHARLES W.,
 OHMEIS, JOHN,
 OHMEIS, P. M.,
 OL'COTT, DUDLEY,
 OL'COTT, 2ND, DUDLEY,
 OLIN, MRS. STEPHEN H.,
 OLYPHANT, ROBERT,
 OLYPHANT, ROBERT M.,
 ONATIVIA, JOHN VICTOR,
 OPENHYM, GEORGE J.,
 OPDYCKE, LEONARD E.,
 ORDWAY, SAMUEL H.,
 O'ROURKE, JOHN F.,
 OSBORN, MRS. HENRY FAIRFIELD,

*DECEASED.

OSBURN, DR. RAYMOND C.,
 OUTERBRIDGE, MRS. ADOLPH J.,
 OUTERBRIDGE, DR. PAUL,
 *OWEN, HENRY E.,
 PACKARD, MRS. E. WINSLOW,
 PAGE, WILLIAM H.,
 PAINTER, DR. H. McM.,
 *PALMER, S. S.,
 PALMER, DR. T. S.,
 PARISH, WAINWRIGHT,
 PARKER, A. W.,
 PARKER, JUNIUS,
 PARKER, WINTHROP,
 PARPART, WILLIAM E.,
 PARSONS, EDWIN,
 *PARSONS, MRS. EDWIN,
 PARSONS, MISS GERTRUDE,
 PARSONS, H. DEB.,
 PARSONS, JOHN E.,
 PARSONS, MISS MARY,
 PARSONS, WILLIAM BARCLAY,
 PARSONS, WILLIAM H.,
 PARTRIDGE, EDWARD L.,
 PATON, DAVID,
 PATTERSON, HENRY STUART,
 PAUL, JOHN J.,
 PAYNE, MRS. HENRY W.,
 PEABODY, STEPHEN,
 PEARSON, F. S.,
 PEARSON, MRS. FREDERICK,
 PEASLEE, MISS F. RANDOLPH,
 PECK, CHARLES E.,
 PECK, LEICESTER O.,
 PELL, STEPHEN H. P.,
 PENDLETON, FRANCIS KEY,
 PENFOLD, EDMUND,
 PENROSE, DR. CHARLES B.,
 PERCIVAL, L. A. D.,
 PERKINS, GEORGE E.,
 PERKINS, ROBERT P.,
 PERRY, WILLIAM A.,
 PETER, EMIL,
 PETERS, MRS. CHARLES G.,
 PETERS, SAMUEL T.,
 PETERS, WILLIAM RICHMOND,
 PFEIFFER, GEORGE,
 PFIZER, JR., CHARLES,
 PHELPS, MRS. CHARLES,
 PHELPS, MRS. ANSEL,
 PHELPS, DR. GOVERNEUR M.,
 PHILLIPS, WILLIAM W.,
 PIATTI, DR. VIRGIL C.,
 PICKHARDT, CARL,
 PIEL, GOTTFRIED,
 PIEL, MICHAEL,
 PIERRE, ARNOLD BERNARD,
 PIERREPONT, MISS ANNA JAY,
 PIERREPONT, R. STUYVESANT,
 PIERSON, GEN. J. FRED,
 PIKE, R. W.,
 PILLOT, P. STUYVESANT,
 PINCHOT, GIFFORD,
 PLATT, CHARLES H.,
 PLATT, FRANK H.,
 PLATT, HENRY B.,
 PLATTEN, J. W.,
 PLAUT, ALBERT,
 PLYMPTON, GILBERT M.,
 POLK, DR. WILLIAM M.,
 POLLOCK, GEORGE E.,
 POMROY, MRS. H. K.,
 POOR, HENRY V.,
 POPE, FREDERICK W.,
 POPE, G. D.,
 POPE, MISS,
 PORTER, ALEXANDER J.,
 PORTER, HORACE,
 PORTER, LOUIS H.,
 PORTER, WILLIAM L.,
 POST, ABRAM S.,
 POST, MRS. CHARLES ALFRED,
 POST, EDWARD C.,
 POST, JR., GEORGE B.,
 POTTER, MISS BLANCHE,
 POTTER, EDWARD CLARKSON,
 POTTER, FREDERICK,
 POTTER, R. BURNSIDE,
 POTTER, MRS. R. BURNSIDE,
 POTTS, JESSE W.,
 POTTS, WILLIAM BREVOORT,
 POUCH, A. B.,
 PRATT, GEORGE D.,
 PRATT, H. L.,
 PRATT, JOHN T.,
 PRATT, MRS. JOHN T.,
 PRENTICE, JOHN HILL,
 PRENTISS, MISS HENRIETTA,
 PRENTISS, GEO. H.,
 PRESS, T. CHANNON,
 PRESTON, VERYL,
 PRIDDY, LAWRENCE,
 PRIME, MISS CORNELIA,
 PRINCE, EDWARD S.,
 PRINCE, PROF. J. DYNELEY,
 PROCTER, WILLIAM,
 PROCTER, WM. ROSS,
 PRYER, CHARLES,
 PULITZER, MRS. JOSEPH,
 PUTNAM, J. BISHOP,
 PUTNAM, WILLIAM A.,
 PYLE, D. H. McALPIN,
 PYNE, MRS. M. TAYLOR,
 PYNE, PERCY R., 2ND,
 QUINTARD, DR. EDWARD,
 *RADFORD, HARRY V.,
 RANDALL, FRANK E.,

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RANDOLPH, EDMUND D.,
 RANDOLPH, WILLIAM W.,
 RANFT, RICHARD,
 RASCOVAR, JAMES,
 RASMUS, W.,
 RASMUS, W. T.,
 RATHBORNE, RICHARD C.,
 RAUCH, WILLIAM,
 READ, WILLIAM A.,
 REDMOND, MISS E.,
 REDMOND, MRS. HENRY S.,
 REID, JOHN,
 REID, OGDEN MILLS,
 REID, MRS. OGDEN MILLS,
 REIMER, OTTO EUGENE,
 REINCKE, E. A.,
 REINHARDT, GEORGE N.,
 REMSEN, CHARLES,
 REYNOLDS, E. B.,
 RHETT, MISS FLORENCE,
 RHINELANDER, CHARLES E.,
 RHINELANDER, PHILIP,
 RHOADES, MRS. J. HARSEN,
 RICE, MISS MILDRED G.,
 RICE, MRS. WILLIAM B.,
 RICHARD, MISS ELVINE,
 RICHARD, EDWIN A.,
 RICHARDS, EBEN,
 RICHARDS, E. O.,
 RICHARDSON, MRS. C. TIFFANY,
 RIDDER, HERMAN,
 RIGGS, GEO. C.,
 *RIPLEY, H. DILLON,
 RIPLEY, JULIAN A.,
 RIPLEY, LOUIS A.,
 RIVES, GEORGE L.,
 ROBBINS, CHANDLER,
 ROBBINS, MRS. HELEN C.,
 ROBERTS, G. THEODORE,
 ROBERTS, MISS M. M.,
 *ROBERTSON, MRS. FANNY P.,
 ROBERTSON, ALBERT,
 ROBERTSON, R. H.,
 ROBINSON, MRS. DOUGLAS,
 ROBINSON, EDWARD,
 ROBINSON, ELI K.,
 ROBINSON, G. H.,
 ROBINSON, MISS PAULINE,
 ROBISON, WILLIAM,
 ROCHE, MRS. BURKE,
 ROCKWOOD, WILLIAM H.,
 ROE, FRANK O.,
 ROE, IRVING L.,
 ROELKER, ALFRED,
 ROGERS, E. L.,
 ROGERS, MRS. FRANCIS,
 ROGERS, HUBERT E.,
 ROGERS, JAMES H.,
 ROGERS, MRS. WILLIAM BEVERLEY,
 ROKENBAUGH, HENRY S.,
 ROMBOUGH, JOHN B.,
 ROOSEVELT, MRS. JAMES,
 ROOSEVELT, MRS. J. W.,
 ROOSEVELT, MRS. HILBORNE L.,
 ROOSEVELT, JAMES A.,
 ROOSEVELT, W. EMLEN,
 ROOT, ELIHU,
 ROSSITER, ARTHUR W.,
 ROTH, FREDREICK G. R.,
 ROTH, J. E.,
 ROTHWELL, JAMES E.,
 ROWELL, MRS. GEORGE P.,
 ROWLAND, THOMAS,
 RUHE, LOUIS,
 RUNYON, CARMAN R.,
 RUNYON, E. W.,
 RUPPERT, JACOB,
 RUPPERT, MRS. JACOB,
 RUPERTI, JUSTUS,
 RUSSELL, ARCHIBALD D.,
 RUSSELL, DR. JOHN F.,
 RYAN, J. D.,
 RYAN, JOHN BARRY,
 RYLE, ARTHUR,
 RYLE, GRAHAM,
 SACKETT, MISS GERTRUDE T.,
 SAGE, JOHN H.,
 SAMPSON, ALDEN,
 SAMPSON, CHARLES E.,
 SANDS, MISS ANNE A.,
 SANDS, BENJAMIN AYMAR,
 SANDS, MRS. BENJAMIN AYMAR,
 SATTERLEE, MRS. H. L.,
 SANGER, MRS. RALPH,
 SAUTER, FREDERICK,
 SAUTER, JR., FRED,
 SCHAAF, HERMANN,
 SCHAEFER, ANDREAS F.,
 SCHAEFER, EDWARD C.,
 SCHAEFER, HENRY,
 SCHANK, GEORGE E.,
 SCHAUER, C. F.,
 SCHAUFLER, DR. A. F.,
 SCHAUFLER, MRS. A. F.,
 SCHEFER, CARL,
 SCHENCK, HENRY DEB.,
 SCHIEFFELIN, MRS. H. M.,
 SCHIEFFELIN, WILLIAM JAY,
 SCHIRMER, RUDOLPH E.,
 SCHMELZEL, MISS JANE E.,
 SCHMELZEL, JAMES H.,
 SCHMIDT, ADOLPH T.,
 *SCHMIDT, F. LEOPOLD,
 SCHMIDT, WILLIAM H.,
 SCHNABEL, R. A.,
 *SCHNIEWIND, F.,

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SCHOLLE, A. H.,
 SCHRAG, CHARLES A.,
 SCHREIBER, LOUIS,
 SCHULTZE, FRED,
 SCHUYLER, MISS LOUISA LEE,
 SCHWARCZ, MAX M.,
 SCHWARTZ, HENRY F.,
 SCOFIELD, MISS MARION,
 SCOTT, DONALD,
 SCOTT, HON. FRANCIS M.,
 *SCOTT, FRANK H.,
 SCOTT, WILLIAM,
 SCOVILLE, MRS. JOHN H.,
 SCOVILLE, ROBERT,
 SCRIBNER, ARTHUR H.,
 SCRIBNER, MRS. CHARLES,
 SCRYMSEYER, JAMES A.,
 SEAMAN, DR. LOUIS L.,
 SEDGWICK, ROBERT,
 SEE, A. B.,
 SEIFERT, KARL F. J.,
 *SELIGMAN, ALFRED L.,
 SELIGMAN, GEORGE W.,
 SELIGMAN, JEFFERSON,
 SENFF, MRS. CHARLES H.,
 SETON, ALFRED,
 SEXTON, LAWRENCE E.,
 SEYBEL, DANIEL E.,
 SHAPIRO, D.,
 *SHARDLOW, MRS. JOSEPH,
 SHAW, LOUIS AGASSIZ,
 SHEETS, DR. E. A.,
 SHEFFIELD, JAMES R.,
 SHEFFIELD, MRS. JAMES R.,
 SHELDON, MRS. CHARLES,
 SHELDON, EDWARD W.,
 SHELDON, GEORGE R.,
 SHELDON, WILLIAM C.,
 *SHEPARD, AUGUSTUS D.,
 SHEPARD, MRS. ELLIOTT F.,
 SHIPMAN, RICHARD D.,
 SHOEMAKER, HENRY W.,
 SHONTS, T. P.,
 SHURTLEFF, ROSWELL MORSE,
 SIBLEY, MRS. H. W.,
 SIEGEL, JACOB,
 SILLECK, JR., HENRY G.,
 SILLECK, JR., MRS. HENRY G.,
 SILLIMAN, HARPER,
 SIMON, THEODOR A.,
 SIMPSON, JOHN W.,
 SINCLAIR, MRS. JOHN,
 SINGER, ARTHUR J.,
 SKEEL, DR. FRANK D.,
 SKIDMORE, WILLIAM L.,
 SLADE, FRANCIS LOUIS,
 SLAUGHTER, R. B.,
 SLOCUM, J. J.,
 SMIDT, MRS. G. L.,
 SMILEY, DANIEL,
 SMILLIE, CHARLES F.,
 SMILLIE, JAMES C.,
 SMILLIE, RALPH,
 SMITH, DR. A. ALEXANDER,
 SMITH, AUGUSTINE J.,
 SMITH, MRS. CHARLES S.,
 SMITH, ERSKINE M.,
 SMITH, MRS. F. C. W.,
 SMITH, F. M.,
 SMITH, MRS. F. HOPKINSON,
 SMITH, PIERRE J.,
 SMITH, ROBERT K.,
 SMITH, ROLAND W.,
 SMITH, DR. SAMUEL,
 SMITHERS, CHARLES,
 SMITHERS, F. S.,
 SNOW, E. G.,
 SOLTZMANN, E. G.,
 SORCHAN, MRS. VICTOR,
 SPALDING, KEITH,
 SPARROW, MRS. EDWARD W.,
 SPEAR, JR., JAMES,
 SPEDDEN, FREDERIC O.,
 SPENCER, ALEXANDER H.,
 *SPENCER, LORILLARD,
 SPEYER, MRS. JAMES,
 SPITZNER, GEORGE W.,
 SPOFFORD, MRS. J. L.,
 SPRAGUE, MRS. FRANK J.,
 SPRIGG, JUDGE CARROLL,
 SPRING, MISS ANNA RIKER,
 SPURR, E. W.,
 SQUIBB, DR. EDWARD H.,
 SQUIRE, EBEN H. P.,
 STAFFORD, WILLIAM FREDERICK,
 STAFFORD, MRS. WILLIAM FREDERICK,
 STANDISH, MYLES,
 STANTON, JOHN R.,
 STAPLES, MRS. JOHN J.,
 STARR, LOUIS MORRIS,
 STEARNS, LOUIS,
 STEBBINS, JAMES H.,
 STECKER, ADAM A.,
 STEELE, MRS. CHARLES,
 STEIN, MRS. ALEXIS W.,
 STEINBECK, EDWARD,
 STEINBRUGGE, JR., EDW. J.,
 STEINMETZ, JOHN A.,
 STEPHENS, OLIN J.,
 STETSON, REV. C. R.,
 STEVENS, ALEXANDER H.,
 STEVENS, FREDERIC W.,
 STEVENS, RICHARD,
 STEVENS, MRS. RICHARD,
 STEVENS, THEODOSIUS F.,
 STEVENSON, JR., PAUL EVE,
 STEWART, JAMES,

*DECEASED.

STEWART, MRS. PERCY HAMILTON,
 STEWART, WILLIAM R.,
 STILLMAN, MRS. C. C.,
 STILLMAN, JAMES A.,
 STIMSON, MRS. FREDERIC,
 STIMSON, DR. DANIEL M.,
 STOCKMANN, MISS MARIE F. C.,
 STOECKEL, CARL,
 STOKES, H B.,
 STOKES, JAMES,
 STONE, MISS ANNIE,
 STOUT, JOSEPH S.,
 STOW, GEORGE G.,
 STRANGE, A. B.,
 STRAUS, H. GRANT,
 STRAUSS, FREDERICK,
 STREAT, JAMES,
 STREET, W. A.,
 STREETER, JR., D. D.,
 STRONG, JR., BENJAMIN,
 STRONG, RICHARD A.,
 STRONG, THERON G.,
 STROOCK, LOUIS S.,
 STUART, MRS. MALCOLM,
 STURGES, HENRY C.,
 SUCKLEY, MRS. R. B.,
 SUFFERN, ROBERT ADAMS,
 SULLIVAN, MRS. JAMES,
 SUMMERSON, CARROLL T.,
 SUTPHEN, JOHN S.,
 SWENSON, S. A.,
 TABER, MISS MARY,
 TAFT, HENRY W.,
 TAG, ALBERT,
 TAILER, EDWARD N.,
 TALCOTT, JAMES,
 TALMAGE, MRS. E. T. H.,
 TATHAM, CHARLES,
 *TATUM, A. H.,
 TAYLOR, MRS. HENRY OSBORN,
 TAYLOR, HENRY R.,
 TAYLOR, JAMES B.,
 TAYLOR, KNOX,
 TAYLOR, LLOYD,
 TAYLOR, MOSES,
 TAYLOR, ROBERT C.,
 TENNEY, C. H.,
 TERRY, JR., MRS. JOHN T.,
 *TERRY, JOHN T.,
 THACHER, ARCHIBALD G.,
 THACHER, MRS. GEORGE W.,
 THACHER, THOMAS,
 THAYER, MRS. EZRA RIPLEY,
 THAYER, HARRY BATES,
 THOMAS, DR. ALLEN M.,
 THOMAS, MRS. WASHINGTON,
 THOMPSON, MRS. J. TODHUNTER,
 THORNE, MRS. EDWIN,
 THORNE, JONATHAN,
 VON DREELE, WM. H.,
 THORNE, MRS. JONATHAN,
 *THORNE, NEWBERRY D.,
 THORNE, MRS. SAMUEL,
 THORNE, MRS. W. V. S.,
 THORNE, W. V. S.,
 TIFFANY, LOUIS C.,
 TILLEY, GEORGE D.,
 TILTON, JOSEPH W.,
 TIMKEN, J. HENRY,
 TIMMERMAN, HENRY G.,
 TIMPSON, JAMES,
 TOD, J. KENNEDY,
 TODD, H. H.,
 TOLER, MRS. VIRGINIA W.,
 TOMBY, BORGELDT,
 TONNELI, MRS. JOHN N.,
 TOUSEY, WILLIAM,
 TOWNSEND, MISS AMY C.,
 TOWNSEND, MRS. E. M.,
 TOWNSEND, EDWIN S.,
 TOWNSEND, HOWARD,
 TOWNSEND, ISAAC,
 TOWS, COE DOWNING,
 TRIMBLE, MRS. RICHARD,
 TROWBRIDGE, FREDERICK K.,
 TUCKERMAN, ALFRED,
 TUCKERMAN, PAUL,
 TURNBULL, ARTHUR,
 TURNBULL, MRS. RAMSAY,
 TURNURE, GEORGE E.,
 *TUTTLE, DR. G. M.,
 TUZO, HENRY FRANCIS,
 TWEDDELL, WILLIAM H.,
 TWEED, MRS. CHARLES H.,
 TWINING, E. S.,
 UNDERWOOD, WILLIAM LYMAN,
 UPMANN, CARL,
 VALENTINE, MRS. PATRICK A.,
 VALENTINE, DR. WILLIAM A.,
 VAN BEUREN, JR., FREDERICK T.,
 VAN BEUREN, M. M.,
 *VAN CORTLANDT, AUGUSTUS,
 VANDERGRIFT, S. H.,
 VANDERPOEL, MRS. JOHN A.,
 VANDERLIP, FRANK A.,
 VAN DER SMISSEN, DR. G. J.,
 VAN EMBURGH, D. B.,
 VAN INGEN, MRS. EDWARD,
 VAN INGEN, MRS. E. H.,
 VAN NOSTRAND, B. T.,
 VAN SINDEREN, HOWARD,
 VAN WINKLE, EDGAR B.,
 VARCOE, HAROLD,
 VIETOR, ADOLPH,
 VIETOR, THOMAS F.,
 VINCENT, FRANK,
 VOGEL, HERMAN,
 VONDERMUHL, ALFRED,

*DECEASED

VON GONTARD, MRS. ALEXANDER,
 VONLENGERKE, JUSTUS,
 WADDINGTON, GEORGE,
 WAGSTAFF, C. DUBois,
 WALBURN, JOSEPH,
 WALCOTT, FREDERIC C.,
 WALDON, S. D.,
 WALES, EDWARD H.,
 WALKER, BRYANT,
 WALLER, JR., ROBERT,
 WALLER, MRS. ROBERT,
 WALSH, SAMUEL A.,
 WALTER, EDGAR,
 WALTER, MARTIN,
 WANNINGER, CHARLES,
 WARBURG, PAUL M.,
 WARD, ARTEMAS,
 WARD, MRS. GEORGE CABOT,
 WARDNER, HENRY STEELE,
 WARDWELL, ALLEN,
 WARNER, W. E.,
 WARREN, MRS. J. HOBART,
 WARREN, LLOYD,
 WASHBURN, WM. IVES,
 WATERBURY, JOHN I.,
 WATERBURY, MISS,
 WATSON, CHARLES F.,
 *WATSON, REV. J. HENRY,
 WEBB, F. EGERTON,
 WEBB, MRS. WILLIAM SEWARD,
 WEEKS, JAMES,
 WEIR, MRS. C. GOVERNEUR,
 WELLS, OLIVER J.,
 WENDEL, EVERETT JANSEN,
 *WENDELL, MRS. JACOB,
 WERNER, C. H.,
 WERTHEIM, H. P.,
 WESSEL, HENRY,
 WESTOVER, M. F.,
 WETMORE, EDMUND,
 WHEELER, EVERETT P.,
 WHEELER, WALTER S.,
 WHEELOCK, MRS. G. G.,
 WHITE, A. M.,
 WHITE, HAROLD T.,
 WHITE, HORACE,
 WHITE, LEONARD D.,
 WHITEHOUSE, J. HENRY,
 WHITEHOUSE, WILLIAM F.,
 WHITING, DR. CHARLES A.,
 WHITING, MISS GERTRUDE,
 WHITMAN, CLARENCE,
 WHITMAN, JR., WILLIAM,
 WHITRIDGE, F. W.,
 WICKERSHAM, GEORGE W.,
 WILKINS, F. H.,
 *WILLETS, JOHN T.,
 WILLIAMS, DAVID,
 *WILLIAMS, MRS. G. G.,
 WILLIAMS, GEORGE L.,
 WILLIAMS, JR., RICHARD H.,
 WILLIAMS, MRS. PERCY H.,
 WILLIAMS, R. H.,
 WILLIAMS, THOMAS,
 WILLIAMS, WALDRON,
 WILLIAMS, WILLIAM,
 WILLIAMSON, MRS. BUTLER,
 WILLS, CHARLES T.,
 WILLSON, MRS. K. E.,
 WILSON, PROF. EDMUND B.,
 WILSON, GEORGE T.,
 WINANT, FREDERICK,
 WINGATE, GEO. W.,
 WINTERROTH, MAJ. E. J.,
 WINTHROP, JR., EGERTON I.,
 WISNER, CHARLES,
 WITHERBEE, FRANK S.,
 WITTHAUS, DR. RUDOLPH A.,
 WOLF, ARTHUR D.,
 WOLFF, EMIL,
 WOOD, ARNOLD,
 WOOD, GILBERT CONGDON,
 WOOD, J. WALTER,
 WOOD, MRS. JOHN D.,
 WOOD, WILLIAM CONGDON,
 *WOODHOUSE, J. S.,
 WOODHOUSE COMPANY, J. S.,
 WOODRUFF, ALBERT C.,
 WOODWARD, ROBERT B.,
 WOODWARD, SR., MRS. WILLIAM,
 WORCESTER, WILFRED J.,
 WORRALL, P. B.,
 WRIGHT, J. DUNBAR,
 WRIGHT, JOHN HOWARD,
 WUNDERLICH, H.,
 WYCKOFF, DR. PETER BROWN,
 YORKWITZ, ALBERT,
 YOUNG, A. MURRAY,
 YOUNG, GEORGE W.,
 ZABRISKIE, ANDREW C.,
 ZABRISKIE, MISS ETHEL,
 ZINSSER, AUGUST,
 ZINSSER, MRS. AUGUST,
 ZINSSER, JR., AUGUST,

Corresponding Members

GILFEDDER, T. P.,
 JOHNSTON, SIR HARRY H.,
 STURTEVANT, LIEUT. C. G.,

LE SOUEF, W. H. DUDLEY,
 MILLWARD, RUSSELL HASTINGS,

*DECEASED.

Summary of Membership

| | |
|--|-------|
| Benefactors | 6 |
| Founders in Perpetuity | 16 |
| Founders | 20 |
| Associate Founders | 8 |
| Patrons | 36 |
| Life Members | 278 |
| Annual Members | 1,648 |
| Honorary and Corresponding Members | 14 |
| | — |
| | 2,026 |

Qualifications for Regular Membership

| | | | |
|----------------------|-------|--------------------------|----------|
| Annual Members | \$ 10 | Associate Founders | \$ 2,500 |
| Life Members | 200 | Founders | 5,000 |
| Patrons | 1,000 | Founders in Perpetuity | 10,000 |
| Benefactors | | \$25,000 | |

Form of Bequest

I do hereby give and bequeath to the "NEW YORK ZOOLOGICAL SOCIETY," of the City of New York,.....



THE ZEBRA HOUSE IN THE ZOOLOGICAL PARK

At twilight the reflection of the building in the water of the pond is very striking.

REPORT OF
THE EXECUTIVE COMMITTEE
TO THE BOARD OF MANAGERS.

THE Executive Committee respectfully submit the following report to the Board of Managers for the year 1913:

It is with profound regret that your committee report the death of Mr. J. Pierpont Morgan on March 31, 1913, and of Mr. Hugh D. Auchincloss on April 21, 1913.

Mr. Morgan was one of the earliest Founders, and became a Benefactor in December, 1910, and the Society always found in him a discriminating and powerful friend.

Mr. Auchincloss was a Life Member of the Society, and became a member of the Board of Managers in 1900, and was active as Chairman of the Auditing Committee.

The Executive Committee adopted resolutions which will appear at the end of this report.

MEMBERSHIP.

An active campaign has been maintained during the year to secure new members, with fair results, 168 Annual Members and 7 Life Members having been obtained. The membership on January 1, 1914, is as follows:

| | |
|--|-------|
| Benefactors | 6 |
| Founders in Perpetuity | 16 |
| Founders | 20 |
| Associate Founders | 8 |
| Patrons | 36 |
| Life Members | 278 |
| Annual Members | 1,648 |
| Honorary and Corresponding Members | 14 |
| | |
| Total, 1913 | 2,026 |
| Total, 1912 | 1,942 |
| | |
| Net increase | 84 |

The net increase is rather small by reason of the great number of deaths and resignations entered during the year. The campaign for new members will be continued during the coming year, and it is hoped that substantial additions can be made. In comparison with other similar institutions in this city, the membership is still small, especially when the national scope of our work and activities are considered.

ATTENDANCE, PARK AND AQUARIUM.

The attendance at the Park and the Aquarium for 1913 has been as follows:

| | Park | Aquarium |
|----------|-----------|-----------|
| 1913 | 1,943,683 | 2,205,729 |
| 1912 | 1,708,455 | 2,144,355 |
| Increase | 235,228 | 61,374 |

The attendance at the Park reported above, is the largest in its history, and is evidence of the increasing popularity of that institution with the public. The total annual cost to the City for the maintenance of these two institutions for the year 1913 is 5.7 cents per visitor.

For the prevention of disorderly conduct at the Park, your committee authorized the Director to engage three special detectives to assist the Park force on Sundays and Holidays. The results have been satisfactory, and the disorderly element has been kept well in check. These measures and the cost entailed were necessary because of the lack of effective control by the Police Department.

The City Authorities took active steps during the summer, to suppress the nuisance of throwing refuse and waste paper in public parks generally. If vigorously continued, this will be of great assistance to the Director in his efforts to maintain high standards of cleanliness in the Zoological Park.

ENDOWMENT FUND.

During the year the additions to the Endowment Fund have been as follows:

| | |
|--|------------|
| Subscription, Archer M. Huntington | \$5,000.00 |
| Bequest from the Estate of Henry Iden, deceased | 10,000.00 |

| | |
|--|-------------|
| Bequest from the Estate of Edward Russ, deceased, being balance of bequest of \$10,000 | 5,000.00 |
| Life Membership fees | 1,400.00 |
| | <hr/> |
| | \$21,400.00 |

On December 31, 1913, the total amount of this fund was \$319,062, which produces an annual net income at the rate of 4.55 per cent.

The following investments have been made by the Treasurer upon the recommendation of the Finance Committee:

\$25,000 Consolidated Gas Company of New York, New York and Westchester Lighting Co., General Mortgage, 4% bonds, due July 1, 2004.
 \$1,000 New York, Lackawanna and Western, 4% Terminal Improvement Bonds.

The Sustaining Memberships, which have provided a yearly fund of about \$3,000 for the last five years, expired during 1913, and the only manner in which this loss can be offset is by the increase of the Endowment Fund to \$500,000, and by a substantial increase in the membership. Strong efforts will be made during the coming year in both these directions.

ACCOUNTS.

The Society is in a sound financial condition. On January 1, 1914, the balances to the different funds in the Farmers' Loan & Trust Company were as follows:

| | |
|--|-------------|
| General Income Account | \$15,109.53 |
| Endowment Fund Income Account | 6,544.68 |
| | <hr/> |
| Animal Fund | \$21,654.21 |
| Endowment Fund, (uninvested) | \$20,241.36 |
| Caroline Phelps Stokes' Bird Fund | 1,886.52 |
| Library Fund | 266.69 |
| National Collection of Heads and Horns | 487.72 |
| | <hr/> |
| | \$579.00 |
| | <hr/> |
| | \$45,115.50 |

The accounts of both institutions for 1913 are at present being audited by Messrs. Marwick, Mitchell, Peat & Company, whose printed report will be hereto attached, immediately fol-

lowing the report of the Treasurer. This audit also includes the Privilege Department.

General Income Account.—On January 1, 1913, the balance to the credit of this account, less invested funds, amounted to \$11,200.66, made up as follows:

| | |
|-------------------------------------|-------------|
| General Income Account balance..... | \$ 7,394.59 |
| Endowment Fund Income Account, bal- | |
| ance available for transfer to this | |
| fund | 3,806.07 |
| | _____ |
| | \$11,200.66 |

The receipts During 1913 were as follows:

| | |
|---|-------------|
| Income from Annual Members | \$15,520.00 |
| Sustaining Membership, not including | |
| advance payments | 2,760.00 |
| Sale of bond in accordance with provi- | |
| sions of gift from Mr. John D. Rock- | |
| efeller | 990.00 |
| Refund from New York City for dis- | |
| bursements made on account of | |
| model of proposed new Aquarium | |
| Building, and survey | 1,850.00 |
| Special subscriptions: | |
| Our Vanishing Wild Life ..\$9,491.00 | |
| Wild Life Protection | 1,890.50 |
| | _____ |
| | 11,381.50 |
| Miscellaneous Receipts | 984.53 |
| Income from Endowment Fund during | |
| the year, placed to the credit of the | |
| Endowment Fund Income Account, | |
| but available for transfer to this ac- | |
| count | 12,738.61 |
| | _____ |
| Total receipts | \$46,224.64 |
| | _____ |
| Disbursements during the year 1913 amount to..... | \$57,425.30 |
| | _____ |
| Cash balance, January 1, 1914 | \$36,471.09 |
| | _____ |
| To this cash balance of \$20,954.21 should be added | |
| the following advance payments received dur- | |
| ing the year: | \$20,954.21 |

| | |
|---|-------------|
| Sustaining Memberships, 1914-18 | 200.00 |
| Subscription to Fund for Oil Paintings of Wild Game | 250.00 |
| Subscription to Pheasant Monograph | 250.00 |
| | |
| Total balance | \$21,654.21 |

The balance of \$21,654.21 is made up as follows:

| | |
|---|-------------|
| General Income Account balance..... | \$15,109.53 |
| Endowment Fund Income Account balance, available for transfer to this account | 6,544.68 |
| | \$21,654.21 |

Endowment Fund Income Account.—As stated in previous reports, this account was created merely to distinguish income from the Endowment Fund from the income from dues and other sources, and this fund is available at all times for transfer to the General Income Account, and for use in the work of the Society.

On January 1, 1913, the balance to the credit of this fund was \$3,806.07. During the year the income from the Endowment Fund has amounted to \$12,738.61. One transfer to the General Income Account has been made, which amounted to \$10,000. The balance on December 31, 1913, was \$6,544.68.

Caroline Phelps Stokes' Bird Fund.—The income of this account is derived from the interest on five bonds of the Illinois Central Railway Company, bequeathed to the Society by Miss Caroline Phelps Stokes, deceased, and is devoted to the protection of bird life throughout the country. There has been only one charge against this fund during the year, and that was a contribution of \$50 to assist in securing proper legislation in Virginia for the protection of birds.

On January 1, 1913, the balance to the credit of this fund was \$116.69, and the interest received during the year has amounted to \$200. On December 31, 1913, the balance amounted to \$266.69.

Library Fund.—The balance to the credit of this fund is merely nominal, and is maintained by transfers from the General Income Account from time to time as needed. On January 1, 1913, the balance amounted to \$320.69, and during the year the total amount of \$800 has been transferred from the General Income Account. The expenditures for books, pamphlets, sub-

scriptions to periodicals, express and other charges, during 1913, have totalled \$632.97, and the balance on December 31, 1913, amounted to \$487.72.

This fund needs special subscriptions from those interested in this particular branch of our work.

National Collection of Heads and Horns.—This fund is also maintained by transfers from the General Income Account, which aggregated \$1,000 during 1913, and by subscriptions from a small list of annual contributors, amounting to \$65. On January 1, 1913, this fund showed an overdraft of \$241. The credit balance at the close of the year, however, amounted to \$579.00.

The general income of the Society has not reached a point where appropriations large enough to be of material benefit can be made for this important and interesting collection, and your committee must rely upon special subscriptions to make any notable new acquisitions. The assistance of hunters and sportsmen is particularly desired by your committee.

Animal Fund.—The balance to the credit of the Animal Fund on January 1, 1913, amounted to..... \$11,710.66
The receipts during the year have amounted to..... 31,600.52

Total receipts \$43,311.18

The expenditures during the year have been as follows:

| | |
|-------------------------|-------------|
| Purchase of Birds | \$ 9,069.39 |
| " " Mammals | 10,708.91 |
| " " Reptiles | 1,724.95 |
| " " Insects | 147.57 |

Total \$21,650.82

| | |
|---------------------------------|----------|
| Express and other charges | 1,251.79 |
| Travelling and other expenses.. | 167.21 |

Total expenditures \$23,069.82

Balance, December 31, 1913..... \$20,241.36

Maintenance of the Park.—It proved a serious problem for your committee to live within the maintenance provided by the City for the Park, during the past year. The amount appropriated was \$191,925. This fund is practically divided into two

items—Pay Rolls and Supplies—and the unexpended balances of the sums provided for each are not interchangeable. During the summer the Supplies item was \$2,439 in excess of its average for that period. By stringent measures, however, this excess has been wiped out, and the year has been closed without a deficit.

The sum of \$200,000 for the 1914 maintenance has been granted in a single line, viz.—Salaries and Expenses of the Zoological Park, \$200,000. This is the same amount appropriated for the American Museum of Natural History and the Metropolitan Museum of Art, and is the maximum sum we shall be able to secure as maintenance for the Park for some time to come, although we are not restricted by law, as is the case of the other two institutions. Your committee feel highly gratified at this action, as it will allow far greater freedom in the handling of the accounts, and will permit the making of necessary transfers without restriction. This is one of the most important advances made in recent years.

Maintenance of the Aquarium.—The sum of \$47,345 supplied by the City for the maintenance of the Aquarium for the year 1913, proved sufficient to close the year without a deficit. The sum of \$47,000 in a single line and without subdivision, has been supplied for 1914 and will be adequate for our needs.

PUBLICATIONS.

The Bulletin has been sent to members as usual on the first days of January, March, May, July, September and November, two numbers of which were devoted to the Aquarium.

The Annual Report was also sent to members during the last days of March.

Zoologica, Vol. 1, No. 11, "Feeding Habits of Serpents," by R. L. Ditmars, Curator of Reptiles of the Zoological Park, has been printed and distributed during the year.

Vol. 1, No. 12, Notes on the "Ontogeny of the White Ibis, *Guara Alba*," and Vol. 1, No. 13, "Specialization of Tail Down in Certain Ducks," both by C. William Beebe, Curator of Birds, and Lee S. Crandall, Assistant Curator; and Vol. 1, No. 14, by C. William Beebe, entitled, "Effect of a Postponed Moult upon the Sequence of Plumage in Certain Passerine Birds," will be printed and distributed during the early part of 1914.

Copies of Zoologica as issued, are forwarded to members upon request.

FIRE SIGNAL STATION IN ZOOLOGICAL PARK.

During the early part of the year a request was received from the Fire Department of the City of New York, for permission to locate a telegraph station for the Bureau of Fire Alarm Telegraph in the Borough of the Bronx, in the extreme southeast corner of the Zoological Park on the north side of East 180th Street. This location is about the geographical center of the Borough and has been approved by both Park Commissioner Higgins and Landscape Architect Lay. Your committee at first refused to accede to this request as being against the policy of the Society, but the extremely urgent conditions connected with this request were explained, and permission was finally granted for the erection of a building of design approved by the Society.

The plans have been approved, the site agreed upon, and the work started.

EAST SIDE EXTENSION.

On October 29, 1913, the plans prepared by the Society for the lay-out of paths, walks and fences for the park east of the Bronx River, including that portion not under the control of the Society, were formally approved by Landscape Architect Pilat and Park Commissioner Higgins of the Borough of the Bronx.

PHEASANT MONOGRAPH.

The Pheasant Monograph is progressing rapidly. The paintings are nearly completed, and the text is about three-quarter finished. It is expected that this important work will be ready for delivery not later than May 1, 1915. The prospectus will be sent out about October 1, 1914. The Monograph will have about ninety colored plates, 100 photogravures and twenty maps. The entire issue will consist of 600 sets of four volumes each, and the size of each volume will be about fourteen by sixteen inches. The price per set will be \$250.

PROSECTOR OF THE SOCIETY.

On May 7 your committee appointed Dr. George S. Huntington as Prosector of the Society for the scientific utilization of the soft parts of animals that are at the Zoological Park and Aquarium, for the purposes of the College of Physicians and Surgeons.

A report from this department appears in a separate section of this report.

GAME PROTECTION.

Special subscriptions for the publication and distribution of *Our Vanishing Wild Life*, by Dr. William T. Hornaday, have been received from members of the Board of Managers and friends, in the total amount of \$10,491. The expense of the publication and distribution of 13,000 copies has amounted practically to this sum.

Copies have been sent to members of the United States Senate, the House of Representatives, all State Legislatures sitting in 1912 and 1913, and to Justices of the United States Supreme Court, Governors of all States and Territories, Clerks of State Legislatures, State Game Commissioners and Wardens, and Sportsmen's clubs.

The publication and distribution of this book have been of great benefit to the interests of game protection, and were of help in aiding the passage of the Federal law for the protection of migratory birds.

Through the efforts of the Society, represented by Dr. Hornaday, a clause was included in the new tariff bill, prohibiting the importation into the United States of the feathers, plumage and skins of all wild birds. The campaign in favor of this clause, in co-operation with the National Association of Audubon Societies, was prosecuted throughout the entire summer with great vigor and ultimate success, and as a whole was the most strenuous and expensive of any in which the Society has ever engaged. It ended on September 2 in a sweeping victory for the birds of the world. To the Director of the Park, more than to any other one person, is due this very gratifying result.

Similar measures are pending in Great Britain, Germany and France.

RECEPTIONS.

The Ladies' Auxiliary held a reception at the Park on Thursday, May 8. Band music was furnished, and refreshments were served.

On Monday, May 19, an informal reception, with music and refreshments, was tendered the members of the Society at the Park in the Administration Building.

The following is a calendar of events for the year 1914:

Meetings, Board of Managers.

| | |
|------------------------------|---------------|
| Annual Meeting. | Park Meeting. |
| January 20, 1914. | May 21, 1914. |
| Annual Dinner. | |
| February 10, 1914. | |
| Courtesy of Mr. C. H. Dodge. | |

Meetings, Executive Committee:

| | |
|------------------|------------------|
| January 8, 1914 | May 7, 1914 |
| February 5, 1914 | June 4, 1914 |
| March 5, 1914 | October 1, 1914 |
| April 2, 1914 | November 5, 1914 |
| December 3, 1914 | |

Annual Meeting of Society.

January 13, 1914.

| | |
|---------------|---------------|
| Ladies' Day. | Members' Day. |
| May 14, 1914. | May 21, 1914 |

BOARD OF MANAGERS.

At the Nineteenth Annual Meeting of the Society, held on January 14, 1913, at the Hotel Waldorf-Astoria, the following Managers were elected:

Class of 1916.

| | |
|--------------------------|---------------------|
| F. Augustus Schermerhorn | Percy R. Pyne |
| George B. Grinnell | George C. Clark |
| Cleveland H. Dodge | C. Ledyard Blair |
| Frederick G. Bourne | W. Austin Wadsworth |
| Emerson McMillin | Anthony R. Kuser |
| Watson B. Dickerman | Mortimer L. Schiff |

The Fourth Annual Dinner of the Board of Managers was given by Mr. Frank K. Sturgis on Wednesday, February 19, 1913. The Chairman of the Executive Committee spoke on the subject of the Beebe Monograph on Pheasants, and Dr. Horna-

day spoke on the general subject of game protection throughout the United States, and the results of the publication of *Our Vanishing Wild Life*.

The spring meeting of the Board of Managers was held in the Administration Building in the Zoological Park on Monday, May 19, 1913.

**GALLERY OF OIL PAINTINGS OF ANIMALS APPROACHING
EXTINCTION.**

At the spring meeting of the Board of Managers the proposal of the Executive Committee to raise a fund of \$2,500 a year for five years, to start a gallery of oil paintings of American wild game, so as to secure proper representation of species now threatened with extinction, such as the prong-horned antelope, was endorsed, and referred to the following committee for the arrangement of details:

Frank K. Sturgis, *Chairman.*

Emerson McMillin.

Lewis R. Morris.

William T. Hornaday.

Subscriptions of \$250 a year for five years have been received from the following:

Frank K. Sturgis

Lispenard Stewart

Percy R. Pyne

Mortimer L. Schiff

Subscriptions of \$250 for one year, subsequent years conditional, have been received from the following:

Edward S. Harkness

C. Ledyard Blair

Cleveland H. Dodge

Watson B. Dickerman

Two more subscriptions of \$250 are needed.

A painting of the prong-horned antelope by Carl Rungius for this gallery, has been completed and is on exhibition in the Administration Building. A painting of the snow leopard by Charles R. Knight will be finished shortly.

COLLECTIONS AT AQUARIUM.

All the tanks and pools in the Aquarium are now occupied to their fullest capacity, and the exhibits have probably never before been more varied in character. They are in exceptionally good condition, and are as large as it is practicable to maintain them.

A number of tropical fishes new to the Aquarium were received during the summer, and a special expedition to Florida made a collection of large fishes. The large porpoise, captured at Cape Hatteras in the early part of the year, died during August from the effects of an injury received during its capture. For two and one-half months, however, it proved an attractive exhibit. An expedition was immediately sent to Cape Hatteras to secure additional specimens. Nine porpoises were captured during the early part of November, and have enlivened the exhibits and aroused great interest. Four specimens have since died, but the balance appear to be thriving. Some excellent motion pictures of the capture were made and exhibited at the Annual Meeting of the Society. The entire expenses of this expedition did not exceed \$250.00.

A large amount of painting and repair work has been done in the building during the year.

A census of the exhibits as of January 1, 1914, is as follows:

| | Species. | Specimens. |
|---------------------------------|----------|------------|
| Fishes | 140 | 4,242 |
| Reptiles | 23 | 162 |
| Amphibia | 5 | 58 |
| Invertebrates | 22 | 2,237 |
| Mammals | 2 | 6 |
| Total, January 1, 1914..... | 192 | 6,705 |

CONSTRUCTION WORK AT PARK.

Public Service Building.—The Public Service building is completed and in use by the Privilege Department force. The necessary equipment has been authorized by your committee, and is being installed rapidly. The ice-making machinery was installed during August, and immediately placed in use. This source of ice supply proved a great relief to the Park Administration.

Power Plant and Work Shops.—This building is completed and in use, and all equipment installed.

Yak Shelter.—The plans prepared by your committee for the erection of a shelter for Yaks and other ungulates which can live out of doors in winter, were approved by the Municipal Art Commission, and the work has been done by the Park force at a great saving in cost. Within a comparatively short time this shelter will be occupied by a collection of Yaks and other hardy animals.

Shelter Pavilion.—Plans were prepared by your committee for the erection of a Shelter Pavilion east of the Bronx River, and were formally approved by the Municipal Art Commission early in the year. Your committee had fully expected to have this pavilion ready for use during the present winter, but complications arose during the summer which completely nullified the efforts made. The original estimate for this work, prepared by the architects, was \$6,000. The lowest bid received was in excess of this figure, and the bids were rejected. The authorization was therefore increased to \$8,000, and the matter re-advertised. The lowest bid received, through an error of the bidder, did not include the roof, and the bids were therefore again rejected. The matter was again immediately re-advertised, and a contract for the erection of this pavilion finally awarded on October 9 to Elton & Company, in the amount of \$7,323, the amount available for this purpose being \$8,046. Work was started immediately. At present the foundations are in place and the work is progressing rapidly. A building of this character has long been needed to accommodate visitors in that portion of the Park.

GROUND IMPROVEMENT FUND.

On January 1, 1913, there was a balance of \$44,429.30 to the credit of the Ground Improvement Fund, which has been carefully husbanded during the year. No additional funds for this purpose have been received.

The application made by the Society in January, 1912, for an issue of Corporate Stock for needed improvements at the Park, in the amount of \$195,000, which had been modified from time to time until reduced to \$40,000, and had been pending before the Board of Estimate and Apportionment for such a long time, that the Executive Committee deemed it advisable to submit a new application to take its place, which was done on April 12, 1913, as follows:

| | |
|--|-------------|
| 1. Building and Yards for Hospital and Quarantine | \$30,000.00 |
| 2. Emergency Fund for fencing, yards, &c., and other permanent improvements | 10,000.00 |
| 3. Building and heating plant for Animal Service Buildings | 10,000.00 |

| | |
|---|-------------|
| 4. Development of Park east of Bronx River, planting, walks, fencing, paths, etc. | 2,000.00 |
| Total | \$52,000.00 |

On account of the existing financial stringency, no action has been taken upon this application, and the matter is still pending.

The balances available of the last issue of Corporate Stock are as follows:

| | |
|---|-------------|
| Miscellaneous, including planting, fencing, yards, small installations,, and other permanent improvements | 4,165.34 |
| Zebra House Yards | 7,518.32 |
| | \$11,683.66 |

HOSPITAL AND QUARANTINE.

No corporate stock being available for the erection of an Animal Hospital, your committee, on August 31, requested the City Authorities to authorize the transfer for this purpose, of an unexpended balance standing to the credit of the Zebra House Yards, amounting to \$7,518.32, and not needed for that purpose. This application has been approved, and plans at present are being prepared, and work will start as soon as possible. The need of a Hospital and Quarantine has become imperative, and the funds now available will at least construct the walls, roof and floor of the former.

ELEPHANT HOUSE ROOF.

The problem of properly repairing and making the roof of the Elephant House water-tight, proved rather difficult to handle. The contract for this work, let to the Keepsdry Construction Company on October 10, 1912, was practically ignored by that company and no work was done. On April 16, 1913, this contract was cancelled by the Park Department, upon the recommendation of your committee, and new bids advertised for. On May 22, 1913, the bids were opened and proved unsatisfactory and were not accepted. The matter was re-advertised and a satisfactory bid received from Neptune B. Smyth, Inc., in the amount of \$5,865. Work was started immediately, but has since been delayed somewhat on account of the non-arrival of the

special tile required. The roof has been made watertight, however, and after the recent heavy rains, a close examination failed to disclose any leaks.

NEW AQUARIUM.

The City Authorities having definitely announced the policy of not proceeding with construction work of the character of the proposed New Aquarium, your committee at once took steps to secure proper compensation for the architects for their work in the preparation of the plans, &c. The sum of \$26,250 was agreed upon for this purpose, which includes all engineering fees, and an application for this amount was made to the City in behalf of the architects. In this adjustment the Society is also to be reimbursed for expenses incurred in the preparation of the model, survey, and other items, to the extent of \$1,850.00.

A contract between the City of New York and Barney & Colt, in the amount of \$26,250 for their services, including the fees of the engineer, Mr. William Barclay Parsons, has been executed by both parties, and the money paid. The plans have been listed, sealed and filed with the Park Commissioner of the Borough of Manhattan, with the notation that they can only be used after written notice to the Society, and in accordance with the terms of the existing contract between the Society and the City. The Society has also been reimbursed for expenses incurred.

This closes the entire matter of the proposed new Aquarium for the time being, and relieves the Society and the City from all legal or moral obligations for services in connection therewith, now or in the future, based on these plans.

After the above charges were paid the balance of the original appropriation of \$200,000, made in 1911, was rescinded.

AQUARIUM IMPROVEMENT FUND.

During the year a balance of \$344.50 standing to the credit of the Society for necessary improvements at the Aquarium was rescinded by the City Authorities, in accordance with the declared policy of the comptroller to rescind unexpended balances of long standing.

BISON FOR WIND CAVE NATIONAL PARK.

In 1912, Dr. Franklin W. Hooper, President of the American Bison Society, inaugurated in the name of that Society, a

movement to induce the National Government to join in establishing a new national bison herd, to be located in Wind Cave National Park, South Dakota, on a similar basis as the Montana National Bison Range and Herd. That effort was immediately successful. The Bison Society pledged as a gift to the Government, a nucleus of at least fifteen pure blood bison. Toward that nucleus your committee offered as a gift from the herd at the Zoological Park, fourteen selected bison, seven of each sex. The animals were shipped from the Park on November 25, 1913, and arrived at the range on November 28, in perfect condition.

It is interesting to note that the restocking of the West with this typical American animal, is being carried out largely with bison bred in the City of New York, and under the auspices of this Society.

GORILLA EXPEDITION.

The Society's Expedition to West Africa for living gorillas in charge of R. L. Garner of Philadelphia, is still in the field, and during the year has encountered great difficulties on account of the unusual rains. Two female gorillas have been captured, and at present writing both are in good condition. Present indications are that this expedition will be successful in placing the Society in possession of one or more living gorillas, in good physical condition.

MEDICAL DEPARTMENT.

The general health of the mammals during the year 1913 has been good, but the death rate shows a slight increase in the older animals of the Park over the very low mark of the past few years.

The greatest loss among our collection during the year was that of the fine pair of giraffes which had been in the Park for the past ten years. The male giraffe died in mid-summer of heat-apoplexy; and the female several months later as a result of a complication of diseases.

During the greater part of the year, the Prosector of the Society, Dr. Huntington, has utilized the bodies of practically all the animals dying in the Park for scientific researches in comparative anatomy.

A census of the animals in the Park, taken January 1, 1914, shows the following result:

| | Species. | Specimens. |
|----------------|----------|------------|
| Mammals, | 208 | 601 |
| Birds | 905 | 3,042 |
| Reptiles | 177 | 1,086 |
| | 1,290 | 4,729 |

Several valuable mammals have been added to the collections, the most important of which are a White-Handed Gibbon, a Black Tree Kangaroo, a Great Ant-Eater, a male Giraffe from the Sudan, two Yaks, two Clouded Leopards, a Hartebeeste and females of the Grevy Zebra and of the Grant Zebra.

The bird collections have been enriched by a number of very rare and beautiful birds from remote regions, and at present are in a very satisfactory state.

FORESTRY AND CONSTRUCTION DEPARTMENT.

During the year the roofs of several buildings have required special attention, that of the Reptile House requiring a considerable amount of work. As the buildings grow older the annual repair bill is bound to increase.

In addition to the usual planting, a heavy wind storm on August 5th injured many of the trees and necessitated an unusual amount of work on the park forests. A large amount of construction work was done during the year, the largest item being that of the Yak Shelter and Yards. A number of new cages were built, and a large amount of yards, fences and new walks were constructed, in addition to the usual repairs to existing work.

NATIONAL COLLECTION OF HEADS AND HORNS.

No notable acquisitions have been made to this collection owing to the lack of funds. The following gifts of horns have been received during the year: European Roebuck, presented by Mr. J. Ernest Roth; Mrs. Gray's Kob, presented by Mr. John C. Phillips; Pir-Pinjal Markhor, presented by Mr. Lorenz Hagenbeck; Gayal, horns and skull, presented by Carl Hagenbeck's sons, and a very fine pair of Black Mountain Sheep

Horns presented by Mr. J. Frank Callbreath, Telegraph Creek, British Columbia.

BRONX PARKWAY COMMISSION.

The Bronx Parkway Commission is actively engaged in acquiring the land necessary for the Parkway Reservation. Title to the lands donated has been vested in the Commission, and a very substantial portion of the Parkway has already been acquired. Some idea of the magnitude of this undertaking may be derived from the fact that 1,200 separate titles are involved, running from a single lot up to tracts many acres in extent.

LADIES AUXILIARY.

During the past year the Ladies Auxiliary have been of great assistance in promoting interest in the general activities of the Society, especially among Junior members of the community, who, at some future day, will be called upon to sustain the Society. An annual Spring Garden Party is held at the Zoological Park each May, and an annual midwinter lecture at the Colony Club on a subject calculated to inspire a visit to the Park. They were also active during the year campaigning for the prohibition of the importation of egret and paradise feathers, pledging themselves by example and influence to arrest the sale of these feathers for millinery purposes. Efforts have also been made to secure the co-operation of the ladies of England, Germany and France in the preservation of wild bird life, and pledges were received from a number of Ladies Clubs in different states of this country to help actively in this world-wide movement to preserve bird life.

Your committee desire to take this opportunity to express their appreciation of the interest aroused and the assistance rendered by the Ladies Auxiliary.

JUNIOR AUXILIARY.

A Junior Auxiliary was organized by Miss Charlotte A. Barnes several years ago, and at present between two and three hundred children are enrolled as members. Those under sixteen years of age pay \$1 yearly, and those from sixteen to twenty-one years of age pay an annual membership fee of \$5. The objects of the Auxiliary are to promote civic interest among

the children, and more particularly to prepare the members of the Auxiliary to become members of the Zoological Society when they shall have attained the full age. Two meetings are held each year; one a lecture, and the second a gathering at the Park when the members visit the animals. They have paid for a bear cub at present on exhibition at the Park, and known as Junior.

ACKNOWLEDGMENTS.

The relations with all departments and officials of the City's government, and especially with the Park Department, have continued to be most cordial, and the Committee is greatly indebted to these officials, as well as the members of the Board of Estimate and Apportionment, for their support and co-operation during the past year.

The Directors of the Park and the Aquarium, and their respective staffs, have been most zealous and energetic in the performance of their duties, and the Society enters upon this new year with the assurance of an ever-increasing sphere of activity and usefulness.

Respectfully submitted,

MADISON GRANT, *Chairman.*

PERCY R. PYNE,
SAMUEL THORNE,
WILLIAM WHITE NILES,
WM. PIERSON HAMILTON,

LEVI P. MORTON,
FRANK K. STURGIS,
LISPENARD STEWART,
HENRY FAIRFIELD OSBORN,
Ex-Officio.

Resolutions
of the
Executive Committee of the Board of Managers
of the New York Zoological Society
Passed April 3, 1913.

Resolved, That the Executive Committee of the Board of Managers of the New York Zoological Society learn with great regret of the decease in Rome, on March 31, 1913, of

Mr. J. Pierpont Morgan
a Benefactor of the Society.

Mr. Morgan was one of the earliest Founders, and became a Benefactor in December, 1910, and the Society always found in him a discriminating and powerful friend.

Passed May 7, 1913.

Resolved, That the Executive Committee of the Board of Managers of the New York Zoological Society learn with great regret of the death on April 21, 1913, of

Mr. Hugh Dudley Auchincloss
a Life Member of the Society, and a member of the Board of Managers since 1900. His interest in the welfare of the Society was unremitting, and it is with a deep sense of loss that this record of his death is made upon the minutes.

Treasurer's Report

FOR THE YEAR ENDING DECEMBER 31, 1913.

Income Account

Schedule 1.

Unexpended Balance as at December 31st, 1912:

Cash in Bank:

Available for expenditure during 1913 \$ 7,394.59

Investments:

| | |
|--|-------------|
| \$8,000. New York, Lackawanna & Western Terminal | 7,920.00 |
| 4% Bonds | 53.33 |
| Accrued Interest on Bonds | \$15,367.92 |

INCOME FOR YEAR.

| | |
|---|-------------|
| Annual Dues | \$15,520.00 |
| Sustaining Membership | 2,960.00 |
| Special Subscriptions | 12,131.22 |
| Interest received and accrued | 719.17 |
| Heads & Horns | 3.00 |
| New York City a/c Aquarium Surveys, etc. | 1,850.00 |
| Transfer from Endowment Fund Income Account | 10,000.00 |
| | 43,183.39 |
| | \$58,551.31 |

EXPENDITURES FOR YEAR.

| | |
|--|-------------|
| Annual Report and separates, | 2,080.61 |
| Bulletin | 3,168.77 |
| Photographs and slides | 537.09 |
| Preparation and mailing of circulars | 1,957.99 |
| Zoologica | 294.30 |
| Cost of distribution of publications | 240.90 |
| Expenses, Annual Meeting | 709.00 |
| Expenses of Receptions | 532.75 |
| Treasurer's office expenses | 1,034.50 |
| General office expenses | 3,078.79 |
| Salary of Secretary | 5,000.00 |
| Stationery, printing and office supplies | 2,257.51 |
| Audit of accounts | 600.00 |
| Employer's insurance | 656.23 |
| Aid to employees | 165.00 |
| Aquarium expenses | 120.00 |
| Aquarium specimens | 1,850.25 |
| Our Vanishing Wild Life | 5,263.88 |
| Game Protection | 441.49 |
| Engineering expenses | 218.45 |
| Miscellaneous expenses | 2,515.57 |
| Aquarium surveys, models, etc. | 339.50 |
| Salary of Assistant Secretary | 500.00 |
| Salary and expenses of Librarian | 100.00 |
| Bird Plumage Campaign | 1,000.00 |
| Heads and Horns Fund (Transfer) | 1,000.00 |
| Library Fund (Transfer) | 800.00 |
| | \$36,462.58 |
| Carried forward | \$36,462.58 |

| | | |
|--|----------|-------------|
| <i>Brought forward</i> | | \$36,462.58 |
| <i>Unexpended Balance as at December 31st, 1913:</i> | | |
| <i>Cash in Bank:</i> | | |
| Available for expenditure during 1914, | | 14,949.53 |
| Received from Sustaining Memberships in advance for 1915, 1916, 1917, 1918, | | 160.00 |
| | | \$15,109.53 |
| <i>Investments:</i> | | |
| \$7,000. New York, Lackawanna & Western Terminal 4% Bonds. (One bond sold during year for \$990)... | 6,930.00 | |
| Accrued interest on bonds | 49.20 | 6,979.20 |
| | | \$58,551.31 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Maintenance Fund

Schedule 2.

RECEIPTS.

| | |
|---|--------------|
| Received from the City account Maintenance Appropriation of \$191,925.00 for the year | \$163,392.78 |
| Due from the City on account of Maintenance | 26,177.58 |
| Unexpended balance to revert back to the City | 2,354.64 |

EXPENDITURES.

| | |
|--|-----------|
| Maintenance of buildings and care of collections | 52,922.74 |
| Maintenance and care of grounds | 51,221.16 |
| General administration | 18,102.86 |
| Food for animals | 39,744.77 |
| Fuel | 8,202.97 |
| Electric service | 1,795.50 |
| Paints and oils | 1,720.24 |
| Vehicular transportation | 1,346.88 |
| Uniforms and badges | 1,251.85 |
| Hardware | 1,232.47 |
| Plumbing materials | 1,143.53 |
| Lumber | 1,120.03 |
| Tools and machinery | 975.85 |
| Telephone service | 871.42 |
| Office supplies | 745.28 |
| Janitors' supplies | 675.23 |
| Miscellaneous equipment | 670.06 |
| Miscellaneous supplies | 602.31 |
| Lubricating and fuel oils | 600.08 |
| Stationery and printing | 586.06 |
| Miscellaneous materials | 455.48 |
| Expressage and deliveries | 426.29 |
| Disinfectants | 336.18 |
| Sand, cement and brick | 242.10 |
| Fencing and netting | 234.53 |
| Apparatus and machinery repairs | 230.42 |
| Signs and labels | 200.25 |
| Drugs and medicines | 195.18 |
| Office furniture and fixtures | 192.40 |

Carried forward \$188,047.12

| | |
|---|--------------|
| <i>Brought forward</i> | \$188,947.12 |
| Ice | 181.60 |
| Janitors' equipment | 168.29 |
| Sanitary service | 168.00 |
| Telegraph, cable and messenger service | 138.07 |
| Nursery supplies | 135.38 |
| Furnace repairs and replacements | 116.96 |
| Medical attendance (employees) | 98.00 |
| Rubber hose | 83.75 |
| Nursery stock and seeds | 73.26 |
| Glass and glaziers' supplies | 59.46 |
| Electrical supplies | 58.70 |
| Brushes and painters' equipment | 53.27 |
| Laundry | 38.97 |
| Medical attendance (animals) | 30.00 |
| Awnings and shades | 26.75 |
| Miscellaneous expenses | 25.96 |
| Engineering supplies | 19.95 |
| Mats and floor coverings | 15.00 |
| Harness and vehicle repairs | 14.25 |
| Veterinary supplies | 10.67 |
| Surgical instruments and appliances | 6.95 |
| Unexpended balance to revert back to the City | 2,354.64 |
| | \$191,925.00 |

H. R. MITCHELL,
Chief Clerk.
 January 9, 1914.

PERCY R. PYNE,
Treasurer.

Ground Improvement Fund

Schedule 3.

SHOWING STATUS OF APPROPRIATION No. 5.

| | |
|--|------------|
| Unexpended balance of Appropriation No. 4, brought forward | \$3,099.78 |
| Reductions on various contracts, old account | 1,416.96 |

RECEIPTS.

Appropriated by Board of Estimate and Apportionment:

| | |
|--------------------------------|-------------|
| Available, July, 1908 | \$65,000.00 |
| Available, August, 1909 | 10,000.00 |
| Available, August, 1910 | 84,500.00 |
| Available, October, 1911 | 155,000.00 |

Premium on bonds to December 31, 1913

1,260.02

\$320,276.76

EXPENDITURES.

By the Zoological Society:

| | |
|--|-----------|
| Baird Court Boundary and Concourse | \$ 408.68 |
| Crematory and fuel shed | 489.76 |
| Ax̄is and Sika Deer fences | 1,337.63 |
| Guard rails | 2,478.65 |
| Boundary fences | 3,303.58 |
| Elephant House walks and yards | 1,797.94 |
| Forestry and planting | 17,796.77 |
| Miscellaneous | 12,904.67 |
| West Farms Block | 2,150.88 |
| New walks | 10,579.88 |

Carried forward

\$53,248.44

| | | |
|--|--|-------------|
| <i>Brought forward</i> | | \$53,248.44 |
| Llama yards | | 377.48 |
| Reconstruction of walks | | 3,294.39 |
| Filling Duck Aviary | | 572.10 |
| Boston Road Public Comfort Station | | 10.00 |
| North end of Baird Court | | 947.61 |
| Public Comfort Station, Elephant House | | 1,978.20 |
| Zebra and Wild Horse installation | | 2,638.28 |
| Small Dear House walks and yards | | 324.25 |
| Polar Bear Den | | 975.19 |
| New Bear Dens | | 466.13 |
| Administration Building | | 318.83 |
| Eagle and Vulture Aviary | | 935.53 |
| Beaver Pond | | 1,748.36 |
| Buffalo fence | | 530.00 |
| Sea Lion pool | | 579.79 |
| Bronxdale Bridge | | 1,476.79 |
| Zebra House yards | | 4,938.76 |
| Temporary sheds, Service Yards | | 1,067.16 |
| Pelican House | | 319.36 |
| Yak shelter and yards | | 7,267.27 |
| Restaurant yards | | 2,262.89 |
| Boat House dock | | 300.00 |
| Concrete benches | | 50.75 |
| New shops | | 979.92 |
| Service yard | | 626.66 |
| | | 90,234.14 |

By the Zoological Society through Park Department:

| | |
|--|-------------|
| Reconstruction of walks | \$5,694.56 |
| Forestry and planting | 13,211.38 |
| Elephant House walks and yards | 1,809.58 |
| Boundary fences | 323.58 |
| Guard rails | 1,075.32 |
| New walks | 5,108.31 |
| Miscellaneous | 3,950.78 |
| West Farms Block | 623.88 |
| Llama yards | 122.52 |
| Small Deer House yards | 191.00 |
| Axis and Sika Deer fences | 362.37 |
| Crematory and fuel shed | 110.24 |
| North end of Baird Court | 577.39 |
| Electric conduit | 760.95 |
| Public Comfort Station, Elephant House | 164.80 |
| Zebra and Wild Horse installation | 879.44 |
| Furnishings and fittings for Administration Building | 2,190.29 |
| Polar Bear Den | 366.20 |
| New Bear Dens | 193.25 |
| Administration Building | 2,388.88 |
| Beaver Pond | 506.80 |
| Sea Lion pool | 431.65 |
| Temporary sheds, Service Yards | 431.59 |
| Bronxdale Bridge | 85.61 |
| Zebra House yards | 2,542.92 |
| Concourse and Baird Court approach | 865.85 |
| Buffalo fence | 410.05 |
| Pelican House | 483.05 |
| Restaurant addition | 902.30 |
| <i>Carried forward</i> | \$46,764.54 |

| | | |
|------------------------------------|--|--------------------|
| <i>Brought forward</i> | | \$46,764.54 |
| Yak shelter and yards | | 1,982.15 |
| Restaurant yards | | 158.87 |
| Power plant equipment | | 6,911.46 |
| Concrete coping, etc., Duck Aviary | | 357.63 |
| Concrete benches | | 99.25 |
| Service Yards | | 576.61 |
| | | 56,850.51 |

Through Park Department:

| | | |
|--|--|---------------------|
| Contract, J. F. Walsh & Bro. Public Service Building | | \$29,230.00 |
| Contract, Knight & De Micca, Excavating rock | | 877.50 |
| Contract, Jos. Balaban, Zebra House | | 25,111.00 |
| Contract, George Hildebrand, Eagle and Vulture Aviary | | 18,867.00 |
| Contract, H. F. English, Public Comfort Station, Elephant House | | 10,357.00 |
| Contract, Abraham & Straus, Furnishing Administration Building | | 7,544.26 |
| Contract, Repairing Bronx River Dam | | 6,514.00 |
| Contract, Construction of Bear Dens | | 7,777.00 |
| Contract, Granite Coping, Baird Court | | 772.00 |
| Contract, Terra Cotta Work, Zebra House | | 1,565.00 |
| Contract, Change in brick work, Zebra House | | 1,247.00 |
| Contract, A. V. Johnson & Co., Work Shops | | 23,895.00 |
| Contract, Jos. E. Dobbs, Pelican House | | 4,045.00 |
| Contract, Jos. Balaban, Addition to Restaurant | | 3,900.00 |
| Miscellaneous expenditures through Park Department | | 7,998.47 |
| Claim of J. V. Schafer, Jr., Co., allowed by Finance Department for extra on Administration Building | | 1,409.86 151,110.09 |
| Balance available for expenditure, December 31, 1913 | | 22,082.02 |
| | | \$30,276.76 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Animal Fund

Schedule 4.

Unexpended balance as at December 31, 1912:

| | | |
|--------------|--|--------------------|
| Cash in Bank | | \$11,710.66 |
| Cash on hand | | 100.00 \$11,810.66 |

Income from January 1, 1913, to December 31, 1913:

Special Subscriptions:

| | | |
|----------------------|--|-----------|
| The Junior Auxiliary | | \$150.00 |
| Admissions | | 12,404.25 |
| Checking | | 42.10 |
| Sale of Animals | | 1,438.25 |
| Miscellaneous | | 65.92 |
| Boating | | 2,000.00 |

| | | |
|------------------------|--|--------------------|
| <i>Carried forward</i> | | \$16,100.52 |
|------------------------|--|--------------------|

| | |
|--------------------------------|-------------|
| <i>Brought forward</i> | \$16,100.52 |
| Privilege Account | 14,000.00 |
| Rocking Stone Restaurant | 1,500.00 |
| | 31,600.52 |
| | <hr/> |
| | \$43,411.18 |

EXPENDITURES.

| | |
|---|-------------|
| Mammals | \$10,708.91 |
| Birds | 9,069.39 |
| Reptiles | 1,724.95 |
| Insect Collection | 147.57 |
| | 21,650.82 |
| <hr/> | |
| Express and other charges | \$1,251.79 |
| Travelling and other expenses | 167.21 |
| | 1,419.00 |
| <hr/> | |
| Unexpended balance as at December 31, 1913: | |
| Cash in Bank | \$20,241.36 |
| Cash on hand | 100.00 |
| | 20,341.36 |
| | <hr/> |
| | \$43,411.18 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Stokes' Bird Fund

Schedule 5.

Unexpended balance as at December 31, 1912:

| | |
|--|------------|
| Cash in Bank | \$ 116.69 |
| Investment: \$5,000. Illinois Central Railway 4% | |
| Gold Bonds | 5,056.46 |
| | 5,173.15 |
| <hr/> | |
| Accrued interest on Bonds | 33.33 |
| Interest received and accrued | 200.00 |
| | <hr/> |
| | \$5,406.48 |
| | <hr/> |

EXPENDITURES FOR YEAR.

| | |
|---|------------|
| Donations towards preservation of bird life | \$50.00 |
| Unexpended balance as at December 31, 1913: | |
| Cash in Bank | \$266.69 |
| Investment: \$5,000. Illinois Central Rail- | |
| way 4% Gold Bonds | 5,056.46 |
| | \$5,323.15 |
| <hr/> | |
| Accrued interest on Bonds | 33.33 |
| | <hr/> |
| | \$5,406.48 |
| | <hr/> |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

National Collection of Heads and Horns

Schedule 6.

INCOME FOR YEAR.

| | |
|---------------------------------|------------|
| Income Account (transfer) | \$1,000.00 |
|---------------------------------|------------|

Special Subscriptions:

| | |
|-------------------------|------------|
| Townsend Lawrence | \$10.00 |
| Thomas Rowland | 10.00 |
| Henry A. Caeser | 5.00 |
| J. T. Pirie, Jr. | 5.00 |
| W. Fraser Gibson | 5.00 |
| William R. Coe | 10.00 |
| John J. Paul | 15.00 |
| W. H. Chase | 5.00 |
| | 65.00 |
| | \$1,065.00 |

EXPENDITURES FOR YEAR.

| | |
|--|------------|
| Overdraft as at December 31, 1912 | \$241.00 |
| Heads and horns | 245.00 |
| Unexpended balance as at December 31, 1913 | 579.00 |
| | \$1,065.00 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Library Fund

Schedule 7.

Unexpended balance as at December 31, 1912:

| | |
|--------------------|----------|
| Cash in Bank | \$320.69 |
|--------------------|----------|

INCOME FOR YEAR.

| | |
|---------------------------------|------------|
| Income Account (transfer) | 800.00 |
| | \$1,120.69 |

EXPENDITURES FOR YEAR.

| | |
|-----------------------------------|----------|
| Books, pamphlets, etc | \$510.83 |
| Subscription to periodicals | 104.44 |
| Express and other charges | 17.70 |
| | \$632.97 |

Unexpended balance as at December 31, 1913:

| | |
|--------------------|------------|
| Cash in Bank | 487.72 |
| | \$1,120.69 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Aquarium Maintenance Fund

Schedule 8.

RECEIPTS.

| | |
|--|------------------|
| Received from the City, account Aquarium Maintenance Appropriation of \$47,345.50 for the year | \$41,446.53 |
| Due from City on account of Aquarium Maintenance | 5,889.09 |
| Unexpended balance | 9.88 \$47,345.50 |

EXPENDITURES.

| | |
|--------------------------------|------------------|
| Salaries | \$33,376.64 |
| Fish Food | 2,158.09 |
| Fuel | 4,034.13 |
| Laundry, Cleaning, etc | 37.87 |
| Office Supplies | 186.07 |
| Ice | 147.91 |
| Ammonia for Ice Machine | 13.50 |
| Plant Supplies | 473.95 |
| Furniture | 25.50 |
| Wearing Apparel for attendants | 110.50 |
| Plant Equipment | 952.71 |
| Plant Materials | 491.96 |
| Repairs | 3,130.44 |
| Electricity | 1,050.82 |
| Gas | 450.64 |
| Cartage | 328.41 |
| Telephone Service | 180.23 |
| General Plant Service | 22.50 |
| Contingencies | 39.09 |
| Petty Cash Disbursements | 124.66 |
| Unexpended balance | 9.88 \$47,345.50 |

ROBERT SUTCLIFFE,
Clerk.

January 9, 1914.

PERCY R. PYNE,
Treasurer.

Aquarium Improvement Fund

Corporate Stock, C. D. P. No. 4.

Schedule 8-A.

| | |
|---|----------|
| Unexpended balance as at December 31st, 1912 | \$344.50 |
| Above balance rescinded by Board of Estimate and Apportionment, | |
| April 10, 1913 | 344.50 |

Account closed.

(Signed)

MORRIS MAYER,
*Bookkeeper, Department of Parks,
Manhattan and Richmond.*

January 1st, 1914.

New Building Fund

Corporate Stock C. D. P. No. 92.

Schedule 8-B.

Construction of Foundations and Walls of Wings, New York Aquarium,
Battery Park.

| | |
|---|--------------|
| Original Appropriation | \$200,000.00 |
| Rescinded by Board of Estimate and Apportionment, June 5, 1913. | 170,900.00 |

| | |
|---------|-------------|
| Balance | \$29,100.00 |
|---------|-------------|

| DISBURSEMENTS. | | |
|---------------------------------------|-------|--------------------|
| F. W. Miller, Borings | ..... | \$ 411.08 |
| Healey Machine & Construction Co. | ..... | 122.80 |
| New York Zoological Society, Expenses | ..... | 1,850.00 |
| Barney & Colt, Architects' fees | ..... | 26,250.00 |
| Balance available, December 31, 1913 | ..... | 466.12 \$29,100.00 |

(Signed)
January 1st, 1914.

MORRIS MAYER,
*Bookkeeper, Department of Parks,
Manhattan and Richmond.*

Endowment Fund

Schedule 9.

Funds as at December 31, 1912:

| | | |
|--|-------|---------------------|
| Cash in Bank | ..... | \$1,226.52 |
| Investments at cost | ..... | 296,092.50 |
| Balance due by Endowment Fund Income Account | ..... |  |
| (Accrued Interest) | ..... | 343.78 \$297,662.80 |

Endowment Fund:

| | | |
|-----------------------|-------|-------------|
| Estate of Henry Iden | ..... | \$10,000.00 |
| Estate of Edward Russ | ..... | 5,000.00 |

Special Subscription:

| | | |
|-------------------------------|-------|--------------------|
| M. Archer Huntington | ..... | 5,000.00 20,000.00 |
| Life Membership Subscriptions | ..... | 1,400.00 |
| | | \$319,062.80 |

Funds as at December 31, 1913:

Investments at cost:

| | | |
|---|-------|-------------|
| \$20,000 Westchester Racing Association 5% First Mortgage Bonds | ..... | \$20,000.00 |
| 3,000 Second Mortgage, Clara N. Gibert and others, 6% over land and buildings, Broadway and 17th Street | ..... | 3,000.00 |
| 5,000 Colorado & Southern 4% Bonds | ..... | 4,750.00 |
| 5,000 Michigan Central R. R. Co. 4% Bonds | ..... | 4,950.00 |
| 10,000 New York City 1957 4% Corporate Stock | ..... | 9,925.00 |
| 10,000 St. Paul, Minneapolis & Manitoba 4% Bonds | ..... | 9,800.00 |
| 50,000 U. S. Steel Sinking Fund 5% Bonds | ..... | 51,812.50 |
| 50,000 American Telephone & Telegraph 4% Bonds | ..... | 45,000.00 |
| 25,000 Rhode Island Suburban Ry. Co. 4% Bonds | ..... | 21,250.00 |
| 20,000 New York City 1958 4% Corporate Stock | ..... | 19,875.00 |
| 10,000 New York City 1957 4% Corporate Stock | ..... | 9,963.50 |
| 10,000 New York City 1958 4% Corporate Stock | ..... | 9,962.50 |
| 20,000 Chicago & Northwestern Ry. Co. General Mortgage 4% Bonds | ..... | 19,750.00 |
| 20,000 Vandalia Railroad Co. Consolidated Mortgage 4% Bonds | ..... | 19,400.00 |
| 5,000 Missouri & Illinois Bridge & Belt R. R. Co. 1st Mortgage 4% Bonds | ..... | 5,000.00 |
| 10,000 Chicago, Milwaukee & Puget Sound, 1st Mortgage 4% Bonds | ..... | 9,525.00 |

Carried forward \$263,962.50

| | | |
|---|-----------|------------------|
| <i>Brought forward</i> | | \$263,962.50 |
| 7,000 Chicago, Milwaukee & Puget Sound, 1st Mortgage 4% Bonds | 6,562.50 | |
| 5,000 Chicago, Milwaukee & Puget Sound, 1st Mortgage 4% Bonds | 4,687.50 | |
| 3,000 New York, Lackawanna & Western 4% Terminal Improvement Bonds | 2,970.00 | |
| 20,000 Milwaukee, Sparta & Northwestern 1st Mortgage 4% Bonds | 18,900.00 | |
| 25,000 New York & Westchester Lighting Company, General Mortgage 4% Gold Coupon Bonds | 19,750.00 | \$316,832.50 |
| Cash in Bank | 1,886.52 | |
| Balance due by Endowment Fund Income Account | 343.78 | |
| | | \$319,062.30 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Endowment Fund Income Account

Schedule 10.

Unexpended balance as at December 31, 1912:

| | |
|--|----------------|
| Cash in Bank | \$3,806.07 |
| Accrued Interest on Endowment Fund Investments | 4,141.67 |
| \$7,947.74 | |
| Less: Due to Endowment Fund (Accrued Interest) | 343.78 |
| | \$7,603.96 |

INCOME FOR YEAR.

| | |
|--|------------|
| Interest collected from Endowment Fund Investments | \$8,596.94 |
| Interest accrued on Endowment Fund Investments | 4,585.84 |
| \$20,786.74 | |

EXPENDITURES FOR YEAR.

| | |
|--|-----------------|
| Transferred to Income Account | \$10,000.00 |
| Unexpended balance as at December 31, 1913: | |
| Cash in Bank | \$6,544.68 |
| Accrued interest on Endowment Fund Investments | 4,585.84 |
| | \$11,130.52 |
| Less, due to Endowment Fund | 343.78 |
| | 10,786.74 |
| | \$20,786.74 |

H. R. MITCHELL,
Chief Clerk.
January 1, 1914.

PERCY R. PYNE,
Treasurer.

Auditors' Certificate

We have audited the books and accounts of the New York Zoological Society for the year ended December 31, 1913, and certify that the foregoing Schedules "1" to "10" are in accordance with the books, and, in our opinion, correctly record the transactions relating to the Funds of the Society for the year and the condition of the various Funds as at December 31, 1913. Schedules "3" and "8-B" include records of expenditures amounting to \$56,850.51, \$151,110.09 and \$29,100.00 made through the Park Department of the City of New York. We have not verified the expenditures so made, but we have incorporated them in the statements submitted so that these may be complete. The subscriptions, donations and dues reported as received have been properly accounted for and the securities and cash in bank and on hand at December 31, 1913, as shown in the accounts of the Funds presented herewith, were all duly checked and found in order.

MARWICK, MITCHELL, PEAT & Co.,
Chartered Accountants.

79 Wall Street, New York,
February 25, 1914.

New York, March 11, 1914.

The President and Board of Managers of The New York Zoological Society:

Dear Sirs:—

We beg to report we have examined the annual audit of the books and accounts of the New York Zoological Society for the year ending December 31, 1913 as made by Messrs. Marwick, Mitchell, Peat & Company, Chartered Accountants, and herewith submit the same to you as a complete and satisfactory audit of said books and accounts, all expenditures and receipts of the various accounts being clearly set forth and the cash on hand and at the various depositories having been verified and found correct, and all securities in which the funds of the Society are invested having been examined and found as reported.

Expenditures made through the Park Department of the City of New York have not been verified by this audit as such moneys have not passed through the hands of this Society, but are in due course checked and verified by the Comptroller of the City.

Respectfully submitted,

WILLIAM W. NILES,
Chairman.

LISPENARD STEWART,
H. CASIMIR DERHAM.



PAIR OF YAKS RECENTLY ADDED TO THE COLLECTIONS

REPORT OF THE
DIRECTOR OF THE ZOOLOGICAL PARK
TO THE BOARD OF MANAGERS.

THE year 1913 has been marked by the greatest attendance of visitors, the greatest number of arrivals of particularly rare mammals and birds, and the greatest number of serious deaths among the larger mammalia. It has also been characterized by the low-water mark in police protection, which up to December 31 was deplorably inadequate.

The collections of the Park have been fully maintained at the high standard reached in 1912, and at the close of the year the total number of species shows a substantial augmentation. Our former policy of increasing the number of species and diminishing the representation of each, has been steadily followed, with the result that we now exhibit 1290 distinct forms.

Two features of the past year's developments have been to us particularly gratifying. The first was an increase in our annual attendance of 235,228, which brought the total number of visitors up to 1,943,683. The second was the increase in our annual maintenance appropriation to \$200,000, a sum with which it is possible to maintain the Zoological Park collections, keep the buildings in repair, and properly care for the grounds. For the first time in five years we are able to feel that our income is reasonably adequate for our legitimate needs.

THE POLICE SITUATION.

The contract between the City and the Zoological Society provides that the City shall furnish for the Zoological Park "adequate police protection." There have been periods when this agreement has been faithfully observed; but there have been others wherein it has been almost a dead letter. Heretofore we have made no public complaint regarding this matter, but now the time has arrived wherein a full statement of the case is both necessary and desirable.

About one year ago, the police situation in the Zoological Park became desperate. It was improved, not through any action or effort of the Police Department, but through the creation of a service of our own, at the expense of the membership of the Zoological Society.

Two years ago the order went forth from the Mayor's office that all commissions held by special policemen should be revoked. That order was duly transmitted to us by the Police Commissioner's office. It affected the seven men of our force on whom we had been relying for the protection of the Park and its visitors.

During the years 1909-11, inclusive, the police service in the Zoological Park had become notoriously inefficient. This was due to an endless chain of changes in assignments, by which no officer was permitted to remain on duty in the Park long enough to become familiar with the situation, or to become really interested in it. Our urgent requests for permanent details for the good of the service, and general economy also, were firmly refused. The most hopeless of all policemen is the one who is assigned each day to a new post, and has no chance to become specially interested in any one. Officers who came as strangers to the Park, to be here today and gone tomorrow, were careful not to make any arrests, because an arrest often meant an attendance at court on the following day *on their own time*. Thanks to this system of constant changes, some of the regular police officers detailed for duty in the Park were like wax figures in police uniform, and little more.

Worse than this, in 1912 and '13 the men of the police force appearing in our Park were so terrorized that they did not dare to make an arrest for an ordinary offense unless forced to do so by some Park employee. I know this because I heard the late Captain Hodgins instruct two of his policemen in the Park to "make arrests whenever called upon to do so by Park keepers, or other Park employees, but not otherwise"; and at that time I informed him that services on such a basis as that were of very little value to us. This was during the period of demoralization when "the citizen" was exalted and the officer of the law was browbeaten and discredited.

With the removal of our own special policemen, the Park was left almost defenseless. A direct appeal to the Mayor finally resulted in the reappointment of our special officers, Messrs. Merkel, Costain, Von Benschoten and three others. Although this gave us power to make arrests, it did not provide for the handling of the great crowds on Saturdays and Sundays, when rubbish-throwing and the annoying of animals was particularly rife. Finding these features of the situation quite beyond our control, and receiving in them no help whatsoever from the

Police Department, the Director laid the situation before the Executive Committee of the Society, and asked for funds from the Society's treasury with which to hire three detectives for special duty in the Park on Saturdays and Sundays. The appropriation asked for was immediately granted. Three strong-arm detectives, experienced in Park work, were engaged and placed on duty, to prevent and punish disorderly conduct on the part of persons of lawless and disorderly tendencies. These officers worked all summer in close touch with Chief Forester H. W. Merkel who heartily welcomed their support and co-operation.

The result entirely met the Society's expectations. In a very short time it became known that disorderly persons were liable to be arrested by plain-clothes men, and a thousand petty offenses against good order and decency were adequately punished on the spot. Any man who commits an offense would much rather be ejected from the Park, or even kicked, than haled to court five miles away, with the certainty of a fine at the end of the journey. It is my conviction that in New York parks it is much better, and vastly more effective, for every petty male offender to be punished by hand, on the spot, than treated as an individual whose person is sanctified, and ceremoniously escorted to a court five miles away for the levy of a small cash fine.

In 1914, under a new administration, we hope that the Police situation in the Park will be greatly improved. We shall ask that two carefully selected officers be permanently detailed for duty in the Park, as once was done with most excellent results; and we shall ask that on Sundays in the busy season those rendered last year by the Zoological Society's detectives, for duty in the Park, to perform services precisely similar to those rendered last year by the Zoological Society's detectives. We shall ask that all officers sent to the Park be instructed to regard the person of no disorderly person as necessarily sacred from reasonable corporal punishment on the spot, in lieu of arrest and a court sentence.

ATTENDANCE.

When a place of public entertainment and instruction is as far removed from the center of population as the Zoological Park is removed, its attendance may fairly be regarded as an index of its popularity, or the reverse. The special effort that is re-

quired to reach our Park imparts special significance to the figures that represent our attendance of visitors.

During 1913 there were no special exhibitions of any kind, no spectacular arrivals; nothing, in fact, save the regular display of animals, and the beauty of the Park in its landscape features. The great gain in attendance (of 235,228) undoubtedly represents an increase in permanent popularity, and of course it is an encouragement to put forth new efforts to render the Park more beautiful, more attractive and more comforting to visitors than ever before. If the people of New York could know how charming the Park woods are in the morning hours of all seasons save in winter, there would be crowds waiting at the gates at 9 o'clock. The spell of the forest in summer is well worth the effort to reach its sphere of influence in the witching hours.

The monthly turnstile records of attendance during the past two years is shown below:

| | In 1913. | In 1912. |
|------------------|---------------|---------------|
| January | 88,195 | 38,271 |
| February | 75,895 | 75,752 |
| March | 127,448 | 118,911 |
| April | 128,828 | 136,689 |
| May | 262,474 | 183,216 |
| June | 297,719 | 266,294 |
| July | 233,961 | 193,816 |
| August | 242,672 | 228,964 |
| September | 171,371 | 162,535 |
| October | 136,800 | 155,105 |
| November | 104,950 | 77,354 |
| December | 73,370 | 71,548 |
| Totals | 1,943,683 | 1,708,455 |

WILD LIFE PROTECTION.

The cause of wild life protection by the Zoological Society has been placed in the front rank of importance among the objects of the Society. The serious conditions that now surround the wild birds and mammals of our country, and the world at large, actually relegate to third place some of the zoological causes that twenty years ago were of paramount importance. Strange as it may seem, ours is the only Zoological Society in

existence that regards the saving of wild species from extinction as a duty decidedly paramount to the comfortable and unruffled study of the anatomy and habits of those species.

The year 1913 has been marked by great activity on the part of the Zoological Society in the promotion of measures calculated to be of far-reaching benefit to the wild life of our continent and the world at large. The Society's campaign book, "Our Vanishing Wild Life," was designed to stir up the laggard states of our country as they have not before been aroused, and spur them to action. To the printing and circulating of that volume the Society devoted the largest sum of money that ever has been expended by any protective organization in a single campaign effort. The volume reached Congress and 48 State legislatures while they were in session, and giving consideration to wild life measures. The struggle for the McLean-Weeks migratory bird law was fairly at its crisis when the volume was placed in the hands of all members of Congress, and the expressions which it elicited were entirely satisfactory.

In support of the federal migratory bird bill, the Society labored long and arduously, especially directing its efforts to arousing the newspaper and agricultural press of the nation and the granges, both state and national. Articles furnished by the Society were published in about 1,250 newspapers and magazines, and called forth hundreds of editorials in support of the general cause.

Before the McLean-Weeks measure was fairly out of the way, the Society assumed before Congress the risk of proposing a clause in the new tariff bill to provide for the protection of the birds of the world against the agents of the millinery trade. The campaign that ensued placed upon the Director of the Park an extra burden of work which continued without a break from January 30 to October 4, when the tariff bill was signed, containing the feather millinery clause identically as originally drawn by the Society. This very costly campaign completely exhausted the funds that were available for the protection of wild life, and rendered necessary a call to the Annual Members of the Society for a special fund. This call met with a generous response, and in a short time \$1,855 were received for the next campaign expenditures.

During the past two years, the Society has raised and expended for the protection of wild life a total of more than

\$14,000 in practical causes for the saving of wild life from further unjustifiable destruction at the hands of relentless men.

In view of the needs of the future for a regular annual income of at least \$5,000 which can be wholly devoted to the protection of wild life, with the unofficial approval of two officers of the Society, the Director of the Park has undertaken to raise by methods of his own, and chiefly among his own friends, a fund of \$100,000 which he has named the Permanent Wild Life Protection Fund. This effort has the sympathy and best wishes of the Society, and the results that already have been achieved point to complete success in the reasonably-near future.

Two things are absolutely certain:

- (1.) The struggle for the preservation of wild life must be kept up continuously, to the end of Time.
- (2.) It is not possible to meet and combat the organized and well-financed forces of destruction without permanent campaign funds with which to support the army of the defense. This Society must have for this purpose at least \$5,000 per year, and more if it can be provided.

THE WIND CAVE NATIONAL BISON HERD.

Early in 1913, Professor Franklin W. Hooper, President of the American Bison Society, decided that steps should be taken to locate a national bison herd somewhere in the northern portion of the great plains region, once densely populated with wild bison. It was decided to seek a site for a new range in southwestern South Dakota; and accordingly J. Alden Loring was engaged to visit that region, examine it thoroughly, and endeavor to find a good location for the proposed new herd. Mr. Loring reported that the Wind Cave National Park offered the opportunity desired.

Professor Hooper, as President of the Bison Society, formally submitted a proposal to the Department of Agriculture, and offered that in case Wind Cave Park should be dedicated to the purpose in view, the Bison Society would present to the Government a nucleus herd of not less than fifteen pure-blood bison.

The offer of the Bison Society was promptly accepted, and Congress immediately appropriated the funds necessary to carry the governmental part of the plan into effect. Some additional land was purchased, to improve the water supply, and the fencing necessary was provided for.

The New York Zoological Society offered to the American Bison Society, as a gift toward the nucleus herd, a herd of fourteen pure-blood bison. This offer was promptly accepted. On November 25 seven male and seven female bison were selected from the Zoological Park herd, and turned over to the Bison Society at the Park, for shipment to South Dakota.

The Government was represented in the shipment by Frederick M. Dille and Frank Rush, and the transportation business was in charge of H. Raymond Mitchell, Chief Clerk of the Zoological Park. The bison were transported by the American Express Company, and reached their new home in the Wind Cave National Bison Range in perfect condition, four days after leaving New York.

This herd makes the fifth herd of bison now in the possession of the national government, and in view of the additional herds now owned and maintained by the Canadian government, we may regard the future of the American bison as secure. It is with satisfaction that we find ourselves able to say that after all, man has saved this species from becoming extinct.

The herd of fifteen bison sent in 1907 to the Wichita National Bison Range has increased to forty-eight head, all in excellent condition.

VIVARIUM IN THE WASHINGTON IRVING HIGH SCHOOL.

While the architects' plans for the Washington Irving High School for Girls were still in course of preparation, Miss Lillian Bell Sage, head of the Department of Biology, applied to the Director of the Zoological Park for advice regarding a vivarium for that school. As a final result, the Society's engineer, Mr. Beerbower, in co-operation with the Director, prepared plans for a complete vivarium, which in due course was constructed. The Zoological Society has furnished the entire stock of living mammals, birds and reptiles with which the vivarium has been stocked, furnished all the labels, and trained an assistant janitor to serve as keeper. The vivarium was opened in September, 1913, and is regularly visited not only by the classes of the Washington Irving High School, but also by many classes in nature study from other schools within a radius of two miles of the parent school.

So far as we are aware, this is the first well-equipped vivarium of vertebrates ever provided for a school, and the experiment has attracted the attention of many educators. The keenness and thoroughness with which Principal McAndrew and Miss Sage entered into the promotion of this feature not only commanded respect, but it inspired co-operation.

PENSIONS FOR PARK EMPLOYEES.

For many months it has been in the mind of the Director that steps should now be taken to create a pension fund sufficient to provide old age and service pensions for the men and women who are spending their lives in the service of the Zoological Park. In view of the great number of employees to be provided for, the task is one of considerable magnitude. It is already under consideration by the officers of the Park, and the Executive Committee is ready to receive the suggestions and proposals that now are being formulated.

Naturally, the men of the Park force do not expect that a fund can be created and disbursed for their benefit without any sacrifices on their part. They are prepared to contribute systematically to any fund that may be created. Unfortunately the matter has been so long postponed that it will be difficult to amass an adequate fund without very substantial help from the Zoological Society. Surely this cause would successfully appeal to the public for which the Zoological Park has been created.

PERMANENT IMPROVEMENTS.

In permanent improvements for the animals, two important items are to be mentioned. One is the Yak Shelter, finished, and the other is the new Hospital for animals, ordered late in the year.

Ever since the walks were constructed along the southern and eastern sides of the original Bison Range, there has been a pronounced dearth of animals between the West Farms Entrance and the bison herd. Incoming visitors were obliged to walk a long distance inside the Park before coming to any animals of interest and importance.

At last that unsatisfactory condition has been improved, by the building of a low, rustic stone structure that for con-

venience is called the Yak Shelter. It is not a building, and is quite unobtrusive, but its low walls and ample but invisible roof provides comfortable shelter for a really large collection of animals. Besides the Yak herd, already started, the shelter will accommodate a herd of elands, or of zebras, a group of kangaroos provided with large grassy enclosures, and various emus and cassowaries. In any event, when visitors reach the top of the steps above the West Farms entrance and look ahead, they will behold so many strange animals that they will feel that they have fully arrived in the Zoological Park.

On the ground the Yak Shelter is sixty feet square, it contains twelve comfortable apartments, and eight of them can be heated to a moderate degree. The shelter was erected wholly by our Zoological Park force, and its cost was \$7,718. It is safe to predict that this odd and heterogeneous collection will be regarded by visitors as a very interesting feature.

The hospital now provided for, and to be erected immediately, is the central and most important feature of a small group of sanitary buildings, or sheds, that for months past have repeatedly and urgently been asked for. The small, cheap and wholly temporary building that for ten years has been used as a hospital is falling down from decay, and must at once be replaced. A small bond issue of \$30,000 for the entire plant involved in caring for sick and dead animals was refused, but finally a small unexpended balance was saved from the Zebra House Yards, and made available for the hospital building, which may be sufficient to construct the walls, roof and floor.

The new hospital will be located in the Service Yard, on the site of the old one. This building will furnish detention wards for contagious cases, and will accommodate sick animals of all kinds save the largest ones.

DEPARTMENT OF MAMMALS.

W. T. Hornaday, Curator; Raymond L. Ditmars, Assistant Curator.

No important changes in the general status of the collections have occurred during the past year. There have been several important losses by death, but in most cases new examples of the respective species involved have been soon purchased to fill the gaps. The most important animals to die were the two Nubian giraffes, which were quartered in the Antelope House. These animals had been on exhibition for a period of



THE YAK SHELTER

nearly ten years, which is considerably above the average life of captive giraffes. One death was the result of valvular heart troubles with attendant enervation, and the other was due to heat apoplexy. An order was at once placed with Carl Hagenbeck for new giraffes and a fine young male Nubian specimen, eleven feet six inches high, arrived November twenty-second. With this animal we received a pair of young yaks—the first of the species to be exhibited in the Park, a male Lelwel hartebeest, two snow leopards, and a black tree-kangaroo.

One of the most valuable accessions of the year was a fine, large male white-handed gibbon, the first really good representative of its genus that ever has reached the Park. The large lemur cage has been wholly devoted to the new ape, and fitted up to enable the gibbon to display its wonderful swinging mode of progression.

The usual number of duplicates among the hoofed animals were sold during the past year, among these being eight elk, two fallow deer, three axis deer and one bison. The status of our bison herd was materially changed by the gift of the New York Zoological Society to the American Bison Society of fourteen fine animals, shipped to the Wind Cave National Park. These animals left the Park on the morning of November 25. The herd contained four adult cows, three young cows, one particularly fine breeding bull, one five-year-old bull and five young bulls, a total of fourteen animals.

A few changes were made by the transfer of animals during the past year. The large Rocky Mountain sheep ram, from Alberta, was removed from its temporary quarters in the Zebra House, and placed on permanent exhibition in the north-easterly corral of Mountain Sheep Hill where new fences and a new shelter had been constructed especially for it. Additional examples of the Grant, Chapman and Grevy Zebras were placed on exhibition in the Zebra House.

A number of particularly interesting specimens were added to the collection in the Small Mammal House, among them being the echidna, tenrec, spiny tenrec, African hedgehog, several tropical rodents and a tree-kangaroo.

The following were the most important births during the year:

| | |
|----------------|-----------------|
| 1 Eland | 2 Virginia Deer |
| 1 Persian Ibex | 6 Fallow Deer |

| | |
|-------------------|------------------------|
| 1 Tahr | 4 Mule Deer |
| 1 Aoudad | 1 Malay Sambar Deer |
| 6 Buffalos | 1 Mouflon |
| 9 Axis Deer | 3 American Elk |
| 3 Hog Deer | 6 Coyotes |
| 2 Barasingha Deer | 2 Beavers |
| 1 Sika Deer | 4 Egyptian Desert Mice |
| 2 Red Deer | 1 Fox Lemur |

The most important deaths during the year were two giraffes, two musk-ox, two mountain goats, a mouflon, barasingha deer, snow leopard, clouded leopard, orang-utan, gibbon (young), and spectacled bear.

LIST OF GIFTS OF MAMMALS IN 1913.

| | |
|------------------------|--------------------------------|
| 3 Rhesus Monkeys | 1 Spotted Cavy |
| 1 Moss Monkey | 5 Armadillos |
| 2 Ring-Tailed Monkeys | 1 Red Coati Mundi |
| 2 Squirrel Monkeys | 3 White-Nosed Coati Mundis |
| 1 Spider Monkey | 4 Raccoons |
| 10 Marmosets | 1 Kinkajou |
| 2 Vervet Monkeys | 9 Opossums |
| 4 White-Faced Sapajous | 1 Coyote |
| 3 Java Monkeys | 1 Gray Fox |
| 1 Green Monkey | 1 Red Fox |
| 1 Mangabey | 5 Agoutis |
| 1 Peccary | 4 Rabbits |
| 1 Mouse Deer | 1 Variable Squirrel |
| 1 White-Tailed Deer | 1 European Red Squirrel |
| 1 Young Puma | 1 Albino Squirrel |
| 3 Ocelots | 3 Flying Squirrels |
| 2 Mink | 1 Mexican Red-Bellied Squirrel |
| 1 Wild Cat | 2 Woodchucks |
| 1 Jaguar | 7 Cuban Tree Rats |
| 2 Black Rats | |

COMPLETE CENSUS OF THE MAMMALS OF THE ZOOLOGICAL PARK.

January 1, 1914.

(*Osborn's Classification.*)

| | Species. | Specimens. |
|-------------------|----------|------------|
| Marsupialia | 6 | 10 |
| Edentata | 2 | 2 |

| | | |
|---|---------|---------|
| Carnivora | 54 | 105 |
| Pinnipedia | 2 | 2 |
| Rodentia | 42 | 128 |
| Primates | 26 | 68 |
| Artiodactyla (Even-toed Ungulates) | 62 | 259 |
| Perissodactyla (Odd-toed Ungulates) | 10 | 18 |
| Proboscidea | 3 | 5 |
| Hyracoidea | 1 | 4 |
| Total | 208 | 601 |

DEPARTMENT OF BIRDS.

C. William Beebe, Curator;
Lee S. Crandall, Assistant Curator; Samuel Stacey, Head Keeper.

The past year has been one of quiet maintenance of the collection, and in spite of the fact that no collecting expeditions of importance were undertaken, nor large consignments of specimens received; there has been no falling off in numbers or general condition. On the other hand, every cage and runway being filled, it has not been possible to materially increase the collection as a whole. The balance of species is constantly shifting, and the many forms which are represented by only a single specimen make it necessary to replace them at once with some other, whenever a death occurs. The passing of new protective laws, and increased zeal in the enforcement of those already in effect in various countries, make it ever more difficult to secure desirable foreign species. This is as it should be, but it will result ultimately in forcing us to send direct to foreign countries for special shipments. Our South American exhibit is slowly diminishing, although there are a number of birds still surviving from the expedition to British Guiana, made five years ago.

Late in December the Assistant Curator made a short trip to northern New York, for the express purpose of securing specimens of the pine grosbeak (*Pinicola enucleator leucura*). This is the first time in several years that this eccentric migrant has appeared in numbers, and the species has not been represented in the collection for six years. A score of the grosbeaks were trapped and are now on exhibition, tame and feeding well.

Early in the summer an outbreak of duck cholera occurred on the Wild Fowl Pond. As in 1911, it was directly due to a

most unfortunate lack of water. Before any serious loss resulted, the geese were corralled behind portable fences in the highest, driest corners of the range, and the main collection of more valuable ducks, numbering about 350 specimens, was removed *en masse* to the Beaver Pond. The infected pond was then drained and the bottom left exposed to the rays of the sun for several weeks. When, at the end of this period, it was refilled and the ducks brought back, there was no recurrence of the malady. The scarcity of water was due to a lack of rain, and to a half-way water famine in the Croton Water Shed. The adequate water supply which is now available for the future will prevent a renewal of this serious scourge.

The breeding colony of night herons is as large as it was last year, and the Barbary turtle doves are now well established as regular breeders. Ring-neck pheasants are now breeding at liberty in the Park, and appear able to maintain their numbers in spite of cats, crows and small boys. The covey of bob-white is still occasionally seen.

Year after year, an increasingly large number of birds are left out of doors during the winter. Every species which can thus be kept in health is a decided gain, the space which it occupied indoors being given to more delicate tropical forms.

A series of twenty-two cages, as nearly mouse-proof as possible, has been erected on the red deer walk. Of these, only eight are for exhibition purposes, the remainder facing south and guarded from all disturbance. These cages have been planted with shrubs, and it is intended to devote them to the breeding of the rarer types of birds which, season after season, deposit eggs in their cages, or make abortive attempts at nest-building. Their attempts at reproduction are almost never successful, because of constant disturbance by visitors.

The cages were finished too late in the season to be given a fair trial last year, although late as it was, many of the quail placed in them and small birds such as silver-eared mesias and gray-winged blackbirds, built nests and laid eggs. These cages will play an important part in the scientific work planned by the Curator, and should yield results which will more than repay the cost of their erection.

The most important accession during the year was a trio of mikado pheasants (*Calophasis mikado*). These birds were reared in the Zoological Gardens of London, from eggs fur-

nished by Mrs. Johnstone, a well-known English aviculturist. Her specimens, received from Formosa in 1912, were the first living examples of the species ever exported from that island, and ours are the first to reach this country.

The series of raptorial birds has been strengthened by the addition of a pair of hooded vultures (*Vultur monachus*), and two Abyssinian vultures (*Necrosyrtes monachus*), a species of small size but extreme rarity. An unusually fine Greenland gyrfalcon (*Falco rusticolus candicans*) was picked up far out at sea by Chief Officer Keiller of the steamer "African Prince," and presented to the Society. In previous years, two other gyrfalcons of the Icelandic form have been received at the Zoological Park under similar circumstances.

A number of rare birds were obtained in Germany, including two Abyssinian great-billed ravens (*Corvultur crassirostris*), a bird large in size and with the beak enormously swollen; four Barrow bustards or knorhaans (*Trachelotis barrowi*), a very uncommon species, and an ocellated megapode or mallee fowl (*Lipoa ocellata*), a now rare member of a group well known from the habit of allowing its eggs to be hatched by the heat generated by the decaying masses of herbage in which they are deposited.

Two Chilian flamingoes (*Phoenicopterus chilensis*), and a yellow-billed coot (*Fulica leucoptera*), were received from Argentina, and a delightfully tame southern boat-billed heron (*Cochlearius cochlearius*), was brought from Colombia, so that we now have both known species of these interesting and bizarre birds.

Two very rare species were added to the collection of barbets—the black-collared (*Lybius torquatus*) and the pied (*Tricholaema leucomelon*). These are undoubtedly the first specimens to be exhibited, in this country, at least.

Pheasant Monograph.—Progress in this great task has been satisfactory for the present year, and there seems no reason why the text and plates should not be completed by the autumn of 1914, in readiness to be published early the following spring. Unusual opportunities have arisen for research along osteological and other lines, which will add to the thoroughness of the monograph as a whole. Seventy plates are now in the hands of the publisher. The text, as so far completed, deals with all but five of the genera.



THE MARSH GARDEN IN BIRD VALLEY, ZOOLOGICAL PARK

CENSUS OF THE BIRDS LIVING IN THE ZOOLOGICAL PARK.

January 1, 1914.

| <i>Orders.</i> | <i>Species.</i> | <i>Specimens.</i> |
|----------------------|---|-------------------|
| Rheiformes, | Rheas | 2 3 |
| Struthioniformes, | Ostriches | 2 3 |
| Casuariiformes, | Cassowaries and Emus .. | 3 4 |
| Tinamiformes, | Tinamous | 4 11 |
| Galliformes, | Quail and Pheasants | 75 166 |
| Turniciformes, | Hemipodes | 1 2 |
| Pteroclidiformes, | Sand Grouse | 1 1 |
| Columbiformes, | Pigeons and Doves | 56 163 |
| Ralliformes, | Coots and Gallinules | 13 21 |
| Lariformes, | Gulls and Terns | 16 56 |
| Charadriiformes, | Plovers and Sandpipers .. | 18 40 |
| Gruiformes, | Cranes, Seriemas, etc. .. | 14 33 |
| Ardeiformes, | Ibises, Storks and Herns | 31 80 |
| Palamedeiformes, | Screamers | 3 5 |
| Phoenicopteriformes, | Flamingoes | 3 9 |
| Anseriformes, | Swans, Geese and Ducks .. | 71 669 |
| Pelecaniformes, | Cormorants and Pelicans .. | 9 28 |
| Cathartidiformes, | New World Vultures | 8 23 |
| Accipitriformes, | Hawks and Eagles; Old World Vultures | 23 51 |
| Strigiformes, | Owls | 16 43 |
| Psittaciformes, | Parrots, Macaws and Cockatoos | 76 172 |
| Coraciiformes, | Kingfishers, Hornbills, etc. | 10 19 |
| Trogoniformes, | Trogons | 1 4 |
| Cuculiformes, | Touracos and Cuckoos .. | 8 12 |
| Scansoriformes, | Barbets and Toucans | 9 17 |
| Piciformes, | Woodpeckers | 9 25 |
| Passeres, | Thrushes, Sparrows and all other Perching Birds | 423 1382 |
| | | — |
| | 905 | 3042 |

Summary: Orders, 27; Species, 905; Specimens, 3,042.

DEPARTMENT OF REPTILES.

Raymond L. Ditmars, Curator; Charles E. Snyder, Head Keeper.

With a large and varied collection like that in the Reptile House it is necessary to constantly fill gaps caused by the death of delicate specimens. This necessitates our keeping in touch with agents in various parts of the world. Conditions vary greatly from year to year. The past year brought little response from European dealers, but several good series of specimens were obtained from South America. In consequence, the reptilian fauna of tropical America was particularly well represented during the past year.

No deaths occurred among the larger and more valuable reptiles during the year. There were the usual losses among the very delicate poisonous serpents, but none to deprive the collection of its representative character. Several species previously new to the collection were placed on exhibition. Among the more important arrivals during the year were the following specimens: 1 Nile crocodile; 1 South American crocodile; 1 Malayan crocodile; 6 star tortoises; 6 Chinese tortoises, 1 fer-de-lance; 1 bushmaster; 3 South American rattlesnakes, 4 boa constrictors; 4 Central American boas; 1 anaconda, 2 Indian pythons; 1 Golden tree snake; 1 Malayan river snake, 1 spectacled cobra and 1 Japanese giant salamander.

Considerable collecting work was done during the year, both by the curator and his assistants. In this way only is it possible to maintain the local collections at a high standard. The cages of the local collection of reptiles were overhauled, repainted and new labels provided. The Curator and Keeper George Palmer spent two weeks in the mountains of Sullivan County, obtaining a fresh series of specimens for this collection. Crates were constructed and shipped from New York, together with the necessary collecting utensils, and over one hundred reptiles of ten species, a fine series of batrachians and a large collection of living insects were brought back. A large touring car was constantly used in this work. This was one of our most successful trips after specimens to represent the reptilian fauna of the state. During this trip a search was made for the big toad characteristic of the mountainous regions of the northeastern United States, and we succeeded in obtaining five examples. Two of these were huge specimens, exhibiting at least four times the bulk of the ordinary toad, (*Bufo*

americanus), but due examination failed to show characters worthy of giving this creature even a subspecific title.

A new feature in the Reptile House collection is the exhibit showing our various batrachians, arranged collectively. We have of late given much more attention to the frogs, toads and salamanders, and a considerable number of new cages and small tanks have been installed. We note that our visitors are particularly interested in these small creatures, when attractively labelled, although the labelling proposition with these diminutive cases and tanks has been rather a puzzle. Among the additions to this collection is the mountain toad of the Eastern states, the big California toad, the striped frog, (*Rana virgatipes*), and many species of the American salamanders, both aquatic and terrestrial.

We have received terrestrial forms of the axolotl, so that our exhibition of this interesting species now shows both phases. Among the examples of the aquatic axolotls are both the black and albino forms. The Old World batrachians are now quite elaborately represented. Among them are: the Japanese giant salamander, the blind salamander or proteus from the Adelsburg Cave in Austria; the European salamander, the ribbed newt, the marbled newt, the Australian newt and the brilliantly marked fire newt of Japan. There is also a good series of European frogs and toads. While adding to the series of batrachians we are now preparing large shallow tanks for the better exhibition of the more strictly aquatic frogs of both Europe and America. In elaborating the series of batrachians Keepers Toomey and Deckert have done remarkably good collecting work in Westchester County.

CENSUS OF REPTILES OF THE ZOOLOGICAL PARK.

January 1, 1914.

| | <i>Species.</i> | <i>Specimens.</i> |
|-------------------|-----------------|-------------------|
| Chelonia | 39 | 247 |
| Crocodilia | 7 | 42 |
| Lacertilia | 34 | 217 |
| Ophidia | 61 | 339 |
| Batrachians | 36 | 241 |
| | | |
| Total | 177 | 1,086 |

SUMMARY OF COLLECTIONS.

A census of the animals in the Zoological Park, taken January 1, 1914, is as follows:

| | <i>Species.</i> | <i>Specimens.</i> |
|-----------------|-----------------|-------------------|
| Mammals | 208 | 601 |
| Birds | 905 | 3042 |
| Reptiles | 177 | 1086 |
| Total | 1290 | 4729 |

DEPARTMENT OF INSECTS.

Raymond L. Ditmars, Curator.

This department, now fully established, is maintained at a uniformly high standard. A considerable amount of correspondence with our reptile collectors has enabled us to exhibit a larger series of living insects during the winter months. The insect collection costs practically nothing to maintain, and the cost of the greater number of the cases for exhibition has been covered by the sale of mounted specimens for souvenirs.

Primarily the sale of these specimens was arranged with a view of furnishing specimens useful in the study of entomology, but the demand was so great that the larger number of butterflies and moths reared by our keepers are now mounted in attractive tablets. Head Keeper Snyder has skilfully prepared a series of very beautiful specimens representing species found in various parts of the world.

During the year the standard series of singing insects was continued, and the transformations of the local moths and butterflies maintained in generous numbers. Among the more important exhibits during the past year were the following: a collection of trap-door spiders and their curious homes, from Arizona; a series of Indian tumble beetles; several cases of the luminous beetle of tropical America; specimens of insect-eating beetles imported by the United States government to destroy the gypsy and the brown-tailed moth; a full life history of the rhinoceros beetle showing the huge grubs and pupae in the underground burrows; female scorpions and their young; six giant centipedes and a series of large tropical spiders representing several species. The life history of the silk worm was again illustrated through the courtesy of Mr. Edward Mahoney, Superintendent of the Fairview Garden School Association of Yonkers, New York.

GROUND IMPROVEMENTS AND MAINTENANCE WORK OF THE
DEPARTMENT OF FORESTRY AND CONSTRUCTION.

Hermann W. Merkel, Chief Constructor and Forester; E. H. Costain,
Assistant Forester.

Completion of Walk East Side of Bronx River.—The Riverside Walk from West Farms to Bronxdale was filled in and thoroughly paved where the old wooden bridges had been, and then surfaced, as far as the location of the new Pavilion, with tarmacadam. The finished portion is now in excellent condition. This work necessitated the laying of 800 square feet of telford, the hauling of 220 yards of earth, and covering with tar-macadam surface an area of 16,500 square feet.

Fence West Farms Block.—Just west of the Bronx River at West Farms, the boundary of the Park was fenced with a close-mesh steel wire netting, six feet high, on top of a concrete coping, averaging twelve inches in height. This necessitated the building of 3,505 cubic feet of concrete coping, and 597 lineal feet of two-inch wire mesh fencing of No. 8 wire erected on steel posts, with a steel top and bottom railing. It is hoped that this improvement will enable us to keep clean and free from waste paper the shrubbery at that end of the Park. The cost of the fence has been about \$1,800.

Erection of Yak Shelter, Yards and Fences.—This rock shelter, sixty by sixty feet and one story high was built from the material excavated from the sites of the new Work-Shops, which we were obliged to dispose of. It contains four large stalls for yaks, with vestibules and feed-rooms connecting with each, and eight smaller rooms of wood and wire netting, besides a large central feed-room. The cost of construction was \$7,717.58.

The seven ranges surrounding this building necessitated the construction and installation of six concrete water-troughs, 400 feet of four-inch drains, 400 feet of water-lines, six hydrants, 9,000 square feet of paving underneath and alongside of the fences, and 7,200 square feet of telford. The material for 1,200 feet of the fences, with their posts and gates, is on hand, but has not yet been erected. The cost of this paving, fencing, etc., when completed, will be about \$2,420.00.

Service Yard, Rocking Stone Restaurant.—A great deal of work was done around the Rocking Stone Restaurant, in enlarging the service yard, enclosing it with a concrete

wall, and building a small additional walk around the south end of the enlarged pavilion. This service yard is now thirty-six by forty-six feet in size, and with the surrounding planting, compelled the removal of over 115 cubic yards of rock, and the construction of 1,600 cubic feet of concrete. This work, with the necessary work of hauling topsoil and regrading, cost \$2,650.00.

Aquatic Bird House Floor.—The Aquatic Bird House floor was completed by the addition of 294 cubic feet of concrete, at a cost of \$350.00.

Walk from Baird Court to Zebra House.—The small stretch of cross walk, connecting Baird Court with the Zebra House, was constructed. This walk not only makes both Baird Court and the Zebra House more approachable, but also gives a good view of the new marsh garden in Bird Valley, without disturbing the landscape. Its cost, with 100 feet of drain pipe and 1,400 square feet of telford with a tar-macadam surface, was \$350.00.

The Water and Marsh Garden.—The marsh garden was completed early last Spring, and already has attracted much attention. It consists of two small pools and one large one, and extensive shores with soil moist enough to sustain many fine marsh plants, such as marsh-mallows, irises, wild rice, spireas, and others of a like character, taking altogether about 1,360 plants.

Planting.—Other planting operations were as follows: 505 plants were put in the rockery in front of the new Bear Dens; 450, (nearly all rhododendrons), along the Elephant Walk; 253, mostly evergreens, around the Rocking Stone Restaurant; 230 shrubs from our own plantations around the new Breeding Cages, and forty-one large trees and some vines in and near the Zebra House. The Italian Garden and Concourse came in for a certain amount of rearrangement, and about 250 additional plants. The cost of this planting amounted to \$1,250.00.

Service Yard.—In the Service Yard, around the new shops and public service building, we constructed 9,000 square feet of telford macadam with tar surface, besides doing some grading, and installing 100 feet of drains and two manholes, at a cost altogether of \$1,220.00.

New Work-Shop Building.—The new Work-Shop Building was completed and turned over by the contractor on May 16, 1913. This building is ninety-five feet by thirty-three

feet, built of light colored brick, and contains a basement and two stories, all thoroughly fireproof. It forms the most notable addition to the working equipment of the Park. It provides for the plumbers, carpenters, iron working and wire working force, a mill-room for the grinding and crushing of grain, a small lunch room for the employees, and the necessary comfort arrangements and heating plant. The power plant consists of one twenty-five h. p. oil engine, and motors up to a capacity of twenty-seven h. p. These motors, however, will only be used for break-down service.

Besides the regular power plant, the following machines have been purchased and installed:

Universal Saw Bench.
Swing Cutoff Saw.
Thirty-inch Band Saw.
Power Hack Saw.
Twenty-inch Power Drill Press.
Combined Power Punch and Shear.
Hand Power Bar Bender.
Wet Drill Grinder.
Fourteen-inch Engine Lathe and Appurtenances.
Large Power Pipe Threading and Cutting Machine.
Small Power Pipe and Bolt Threading and Cutting Machine.
Air Compressor.
Mortising and Boring Machine.
Oat Crusher with Cleaner.
Wire Weaving Machine.

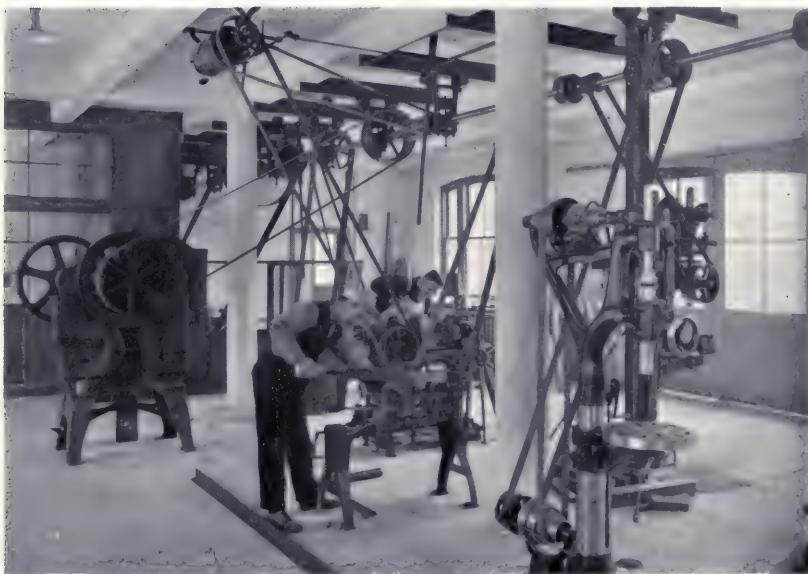
This machinery has been installed complete with belting and other power transmission. We are now moving into this building, and having a complete outfit of machinery, will after this be able to do much work which formerly we were unable to do, and at a lower cost. The total cost of the new building with its power plant and all its machinery was \$33,976.25.

Mountain Sheep Hill.—In order to make the Big-Horn Sheep comfortable on this hill, and prevent this lusty animal from damaging its neighbors, we erected a new fence, and built a rock shelter near the northern end of Mountain Sheep Hill, at a cost of \$850.00.

Guard Rails.—In connection with the walks around the Zebra House and Wild Horse Ranges, the cross walk from Baird Court to the Zebra House, and the new walk in front of the



MACHINE FOR MAKING WIRE NETTING



VIEW IN IRON WORKING SHOP

Breeding Cages, we erected a total of 2,026 feet of guard rails or guard wires, set on steel posts in concrete foundations, at a total cost of \$700.

New Puma Cage.—A puma cage was built of steel T-frames and heavy electrically-welded wire of great strength, after a design made by this Department. It is a very satisfactory structure, and cost \$820 to build.

Surfacing Walks.—During the year we surfaced with tarmacadam the following walks: Service Road to Antelope House, Lydig Arch to Mt. Sheep Hill, Antelope House to Pheasant Aviary, and in front of the Wolf and Fox Dens; altogether, 28,000 square feet, at a total cost of \$1,291.00.

Miscellaneous Ground Improvement Work.—A glass partition was erected in front of the apes cages, in the Primate House, at a cost of \$175.00.

An outdoor concrete bathing pool was constructed for the Rhinoceroses at a cost of \$350.00.

Six feed and sixteen water troughs were built of concrete, at a total cost of \$275.00.

Nine concrete benches cost \$150. This, however, does not represent the cost of the concrete benches alone, but the cost of the building of the forms and of changes made in them during the experiments made with a view to have them perfect. Now that the forms are on hand, we estimate the cost of the benches at about \$6.50 each.

MAINTENANCE WORK.

The disposal of refuse, ashes and litter; the distribution of food supplies, and the general care of trees, lawns, walks, and buildings, was similar to that of previous years, with the exception that the amount of work was proportionately increased by the new installations, and by the fact that many of the older buildings, cages, etc., need more repairs than previously.

The repairs to the roofs of the Aquatic Bird House, and the Reptile House compelled the expenditure of much more material and labor than has been expended for repairs in any year heretofore. At the Reptile House we had to remove all of the slate on the north slope, and reflash and reslate the entire roof. In some cases we even had to furnish new roof boarding. In the Lion House, besides doing a great deal of work on the roof, and

in connection with the drainage system, the floors in the two largest cages were torn out and replaced. This flooring now consists of "Tileine," with a bottom and margin of solid concrete, and if it does not prove to be too cold it will be entirely satisfactory. The cage gutters also came in for a great deal of repair and replacement.

The roofs of all the buildings, with the exception of that of the Zebra House, were thoroughly overhauled and made tight, which in some cases, like the Buffalo Shed and the Fallow Deer Sheds, amounted to an entire recovering.

The usual amount of painting was also done, and we must face the fact that all iron and steel work containing animals must be given a coat of paint annually in order to prevent deterioration.

The Small-Mammal House was, as usual, the one building upon which practically all the repair work of last year had to be done over. A breakdown of the heating plant that supplies this building and the Ostrich House of December 8, threatened dangerous consequences, but by strenuous effort, the system was temporarily repaired before morning without great loss of temperature, and permanent repairs were made a few days afterward.

Care of Grounds and Policing.—Early in the season the depredations among the rhododendrons and dogwood blossoms, etc., were so great, and the general lawlessness and disorder on crowded Sundays became so intolerable that a special force of three men was asked for, and supplied by the Society. With these men and our own force of special policemen, after a few Sundays of hard work, we managed to restore order and decorum, and this almost entirely without making actual arrests. The total number of arrests made is slightly larger than last year, numbering sixteen, a conviction being obtained in each case. The protection by the city police system is totally inadequate, and a special effort should be made to obtain from four to six policemen in plain clothes for Saturday afternoons, Sundays and holidays.

Until the disastrous storm of August 5, 1913, the tree life in the Park was in fairly good condition, but this storm uprooted or broke off forty-eight large forest trees, and thousands of limbs and branches, resulting in serious injury to one visitor, and the death of a deer. The ravages of the storm are still very

much in evidence by fallen trees and limb stubs, and it will be months before the Forestry Department will be able to catch up.

The hickory bark borer is still present, and caused the death of twenty-nine hickories in the past year. With this exception, there was no very serious injury to the tree life from insect or disease. The elm-leaf beetle especially was conspicuous by its absence, and the spraying machine was worked for a few days only.

Fires continue to be a serious source of annoyance and danger in the section east of Bronx River. The most of them originate in the newly-acquired portion of Bronx Park, along the eastern boundary.

At the Nursery the usual amount of live stock and vegetables were raised, but we are working under serious difficulties in the poultry department, and the need of a laying house, and an incubator and brooder house is more important than ever.

DEPARTMENT OF ADMINISTRATION.

H. R. Mitchell, Chief Clerk and Manager of Privileges;
George A. Dorn, Cashier.

In the early part of 1913 this Department was obliged to put a great deal of time on the compiling of an inventory of equipment, in accordance with the wishes of the Comptroller's office. A list of the equipment purchased by the city was furnished by each department, which had to be classified under the proper headings. The original cost and date of purchase was given wherever possible, and an estimate was made of present values. This was a serious undertaking to be accomplished by our small force, and at the same time keep up the routine of regular business. Naturally, the effort consumed several months before it could be entirely completed, and copied in duplicate.

At the same time the Finance Department requested that we inaugurate a system of stock accounting for all supplies used in the operation of the Park. Such a task was impossible without adding to the office force, and there were no funds available for this purpose. After an investigation by the Bureau of Expert Accounting of the Finance Department, of the work being done by this office and of the clerical force by which it was carried on, it was agreed that this system could not be put into effect without an increased force, and we were authorized to include such additional help in our budget request for 1914.

Fortunately the request was granted, and the stock accounting system was put into effect on the first of January, 1914.

The Budget Appropriation for 1914 called for a great amount of detailed information as to the quantities of various foods and supplies used during the previous year, entailing an enormous amount of additional work in its preparation, owing to our inability to put the stock accounting system into effect in 1913.

The rigid rule adopted by the Board of Estimate last year, not permitting transfers from salary appropriations to supplies, was a special hardship this year. Owing to the fact that Mr. Beebe continued to be employed throughout the year on the Pheasant Monograph and was paid from other funds, there was a saving made in Salaries Account of nearly \$2,500, none of which could be applied to the purchase of supplies.

The prices of many supplies of which we are large consumers advanced materially. On the item of beef alone, the best contract we were able to make for the year carried an advance of one cent per pound, making an additional expense of \$1,165.68, for the year. It was not believed possible to keep within the year's appropriation, and only by economies in every direction were we able to accomplish it.

Accounts and Audit.—The changes in the books of the Privilege Department, which were under consideration in 1912, were put into effect at the beginning of the year 1913. The principal benefits gained by the change was the consolidation of the three bank accounts previously carried into one, and the elimination of several books by the transferring of accounts.

The usual audit of the Society's books kept in this office was made after the closing of the accounts for the year. They were found to be correct, and are so attested by the certificate of the accountants immediately following the Treasurer's statements, appearing elsewhere.

The privilege accounts for the year have also undergone a careful audit conducted by the same accountants, and a full report thereon has been made to the Auditing Committee of the Society, accompanied by a detailed balance sheet. Following the Society's usual policy this report is not printed herein, because of its unimportant details, but it is, as it always has been, available for scrutiny by the Accounting Bureau of the Finance Department or any other duly authorized representative of the Mayor, or the Board of Estimate.

During the past season two separate investigations of the receipt and issue of supplies were carried on by the accountants employed by the Auditing Committee, for the purpose of ascertaining if it were necessary or desirable to make any changes in the present methods. These investigations were made at intervals of several weeks, and covered not only the receipt and checking of supplies for the general maintenance of the park, but also supplies for the Privilege Department, including those for the Rocking Stone and Boat House Restaurants.

The report of the investigating accountants was very satisfactory to those responsible for the handling of supplies. Several suggestions were made as to minor details, all of which that are practical will be put into effect after consultation with the Chairman of the Executive Committee.

The attention of some members of the Society may have been called to articles printed in one of the local Bronx papers making attacks on the Society for its manner of handling the Park Privileges. While the statements made in these attacks have been so manifestly unfair as to make a reply to them really unnecessary, it may not be out of place to state to the members of the Society that it has been the aim of those in charge of the Privileges to operate them in the best possible manner for the public benefit. Everywhere in this connection we have made it the rule to give service and quality rather than to increase profits at their sacrifice.

It is well known by the members of the Society, and the public at large, that all the net profits of the privileges are expended directly for the public benefit, in increasing the animal collections of the Park.

Privilege Building.—Although the contract for this building was given out late in 1912, and the winter following was such as to permit building operations to go on almost continuously, the contractor was extremely slow in bringing the work to a conclusion. Even at this time there are still some parts of the contract uncompleted. The most important of these is the electrical work. In order to get the ice machinery into operation during the season, temporary wiring had to be done by the Department of Water Supply, Gas and Electricity. This gave us the use of that portion of the plant on August 16, after which it was operated continuously for the remainder of the season.

Other branches of the privileges, however, were unable to get any benefit from the building. It is expected that all difficult

ties now causing delays soon will be overcome, and that the building will be finished so that full benefit will be had from it during the coming season.

It had not been our original plan to install at once an engine for supplying power for this building, but as construction went forward it was realized there would be very great difficulty in getting an engine of suitable size into the engine-room after the building was completed, and so the immediate purchase and installation of an engine was decided upon. A fifty h. p. engine was purchased and installed, and power has been supplied by this means since October 14.

While the plant has not been operated to its full capacity since that time, sufficient experience has been gained to demonstrate the extreme economy of this kind of power as compared with the use of electricity purchased from the lighting companies.

Rocking Stone Restaurant.—The additions to both winter and summer dining-rooms at the Rocking Stone Restaurant, completed in 1912, have been followed by necessary improvements in the kitchen, which have greatly improved the service. A small steam boiler was installed in the basement which furnishes steam for the dishwasher, plate-warmer and coffee urns.

A good equipment of awnings was provided for the new outdoor dining-room, which added very greatly both to its attractiveness and the comfort of guests.

The service yard for kitchen deliveries was enlarged to about double its original size by blasting away the rock ledge to the west, and also carrying it to the north a considerable distance.

On account of the extension toward the west, Mr. Merkel thought it necessary to remove the walk previously entering the Lunch Room on the south side and plant out the spaces. This arrangement so concealed the Lunch Room as to seriously affect its business for the season. However, this was partially overcome by the enlargement of the dining pavilion.

There is now no general thoroughfare passing the Restaurant. Almost all through traffic either goes up the Buffalo Hill to the left of the steps or continues along the walk toward Beaver Valley. The restaurant signs are small, being readable only at a short distance. The result is that many visitors do not easily succeed in finding the Restaurant.

It is no uncommon occurrence for visitors to say to waiters that although they have visited the Park a number of times, they never before had known there was a restaurant. A plain sign, with ten-inch gold letters on a green background reading "Rocking Stone Restaurant" should be put up on the end and the south side of the front pavilion, as a matter of convenience to visitors who desire a place of refreshment.

Soda Water.—While there was a substantial gain during the past season over the previous one in this division of the privileges, the high record of 1911 was not reached. This condition was almost entirely due to the most unseasonable weather in the month of September that has been experienced in several years. Up to that time, conditions had been fully up to the average.

The delays in the completion of the Privilege Building referred to elsewhere had a more or less serious effect on the showing that would have been made if the facilities finally provided for in this building had been available.

Souvenir Books.—The scale of souvenir books kept pace fairly well with previous years although it was found impossible to carry out our plans for the issue of a new edition-de-luxe to be sold at one dollar, as well as an illustrated booklet intended to appeal especially to children. There were so many demands on our funds for other purposes that both of these projects had to be deferred.

The last editions of both the 25 and 50-cent souvenir books were so large that there still is a sufficient number on hand to meet all demands for some time.

Postal Cards.—We are continuing the sale of souvenir postals issued and put out in 25-cent sets in March, 1912. Although we found it impossible to dispose of as many sets as in the first year, the number of sets sold was very satisfactory. We have found it utterly impracticable to sell postal cards singly, and have been compelled to abandon the idea.

At the close of the year 1913 about half of the last issue of one-and-a-half million cards had been sold. The stock on hand will probably run through the next two years.

Photogravures.—The series of twenty thousand photogravures in sepia, size 8x10, of four animal subjects which was issued as an experiment in 1912, and placed on sale at 50 cents for the set, was so popular as to justify our increasing the number of subjects to twelve. In order to permit those interested greater range in selecting pictures the number of subjects in a set

was reduced to two, and priced at twenty-five cents, including postage. This change made a very substantial increase in the sales, which amounted to double those of previous years. These photogravures are continually being purchased by visitors and sent to all parts of the United States by mail, where they attract very favorable notice and serve to bring the Park to the attention of many to whom it has been previously unknown.

Guide Books.—The eleventh or "Mountain Sheep" edition of the guide book was put on the press early in the season of 1913, and placed on sale on June 1. Heretofore 30,000 copies has been the largest edition ever issued, but it was decided to make this one 40,000. Plates of the previous edition were used after being carefully revised and corrected to bring them down to date.

By the 1st of January, 1914, 13,000 copies had been sold, a surprisingly large sale for that short time, considering the fact that this edition brings the total issue of the Guide Book up to 188,000, and the total number of copies sold to 161,000. It is estimated that this edition will run through 1914 and 1915.

Map, Fans and Folders.—There always has been more or less inquiry from visitors for some kind of a guide map, aside from the one in the Guide Book, to assist them in getting about the Park, but until this season we never have attempted to publish anything of this nature. Such a ready guide map has now been issued in the form of a fan for summer use, the handle being keyed to locate any building or installation instantly. This fan sells for ten cents. The same map is now being made up in folder form, with a similar device for locating points of interest, and will be sold at five cents. It is believed that these two maps will be greatly appreciated by a large number of visitors who do not wish to carry a guide book about with them.

Panoramas.—A panorama or bird's-eye view of the Park in perspective was issued and put on sale in June of this year. This view, which is 15x27 inches, was made in four colors, from an original drawing which required several months in preparation. The price at which it was offered (twenty-five cents) will probably be reduced next season, as the demand has not been up to our expectations.

Boat House Restaurant.—I think we can safely say there has been more real progress in the business of the Boat House Restaurant than during any previous season. There was, however, one greatly-needed improvement that we feel would have very materially effected the general result, but which could not be

secured, and that was the building of a small addition to the cellar, adjoining the kitchen, that would permit the removal of the large storage ice-box from the kitchen, effecting at once great economy in refrigeration and improved service, both highly important matters in the operation of any restaurant.

It is hoped that this much-needed improvement may be secured in 1914.

The present staff of employees at the Boat House is doing excellent work. That it is giving a generally improved service is conclusively shown by the increased business.

Boating.—No further additions were made to the boating equipment during 1913, except the purchase of a small number of flat-bottomed wooden row-boats, to replace those that were beyond repair, thus maintaining the equipment at the original standard.

As usual, during the latter part of May and the months of June and July, on Sundays, our resources were taxed to the utmost. The business for the season was well above that of any previous year.

Again we were most fortunate in not having a serious accident of any kind in connection with the boating. In fact, there was a noticeable absence of the minor accidents which are everywhere so common in public boating.

Funds for the new concrete dock, which has been in contemplation for several years, were not forthcoming. The temporary repairs made last season to the old dock carried it through in fairly good condition, and it may be made to serve another season by further repairs. The new dock, however, is a much needed improvement that ought to be made at the earliest possible date.

Gate Receipts.—We are able to report a very substantial increase in the year's receipts from paid admissions at the entrances. In fact it is noticed in glancing back over the records that there have been but two exceptions to the rule of a yearly increase.

Receipts at the gates on pay days have more than doubled in the last ten years.

Riding Animals.—There have been, I am sorry, to report, no favorable developments since last season toward providing children with a riding elephant. We are still depending on the Di-



WEST APPROACH TO BAIRD COURT, BETWEEN THE LION HOUSE AND LARGE BIRD-HOUSE
Iris and Rhododendron Planting.

rector's assigning the female African Elephant "Sultana" for this purpose as soon as she has reached the proper size.

Aside from failure in this direction, the riding animals continue to furnish the children with as much real pleasure and enjoyment as perhaps any other amusement feature of the park. The net results were well up to the previous year's figures, although no gain was shown.

Pavilion East of Bronx River.—While funds were available for this improvement in 1912, and it was fully expected that construction would begin in time for its completion and use during the past season there were unforeseen delays in approval of plans by the various departments and the Municipal Art Commission, so that the actual letting of the contract was not accomplished until late in the season of 1913. Work was begun by the contractor at once, and is now going on with sufficient despatch that we may confidently expect the pavilion will be ready for use by June 1.

This building will make it possible for us to furnish the first accommodations in the way of shelter and refreshment services to the very large numbers of visitors that have frequented that portion of the Park east of the Bronx Lake and River during the last ten years.

DEPARTMENT OF PUBLICATION AND PHOTOGRAPHY.

Elwin R. Sanborn, Editor and Photographer.

Bulletin—Six numbers of the Bulletin were issued during the year 1913. The cover and four extra pages supplied make this publication substantial and much more interesting.

Annual Report—The Report was issued in its regular form without changes.

Zoologica—Three numbers of Zoologica were put in hand in December, 1913, as was also a lengthy paper with many illustrations on "The Care of Home Aquaria," by Dr. Osburn of the New York Aquarium.

Photography—Over five hundred negatives were made at the Park and the Aquarium, and some photographs, both still and animated, of the Porpoise Expedition in charge of Dr. Townsend of the New York Aquarium.

The motion pictures of the expedition were exhibited at the Annual Meeting of the Society in January, 1914.

Appended is a list of the photographs made during the year 1913.

| | |
|---|-----------|
| Lantern slides | 229 |
| Prints for albums and files | 1,110 |
| " " Society publications | 170 |
| " " Miscellaneous publications | 322 |
| " sold, and used for special purposes | 1,414 |
| Total | 3,245 |
| Number of index albums, to date | 51 |

DEPARTMENT OF ENGINEERING.

George M. Beerbower, Civil Engineer.

Our engineer has been kept so closely confined to the superintendance of construction of the Public Service Building that he has had but little time to devote to other duties. At the very commencement of the foundations for this building it was found necessary that the Society should have a representative constantly on the work, who had knowledge and experience in building construction. This necessity was demonstrated almost daily as the work progressed. Work on that structure began in the fall of 1912, and will continue into the year 1914.

The Service Building includes an ice-manufacturing and refrigeration plant, with cold storage and ice cream manufacturing installations; also a steam laundry, cook-room for animals' food, and other unusual features, all of which demanded a close inspection of every detail of the work.

Our engineer also revised the plans for the Yak Shelter and laid out the building on the grounds, and plotted and staked out the fence-lines of the corrals, together with the water-supply and drainage system.

The grading around the Eagle and Vulture Aviary and Zebra House was planned and staked out, also the walks, and a chain of small lakes eastward of the two structures named.

A high serpentine terrace wall of rustic stone was planned and staked out on the top of bluff east of the Rocking Stone Restaurant and detailed drawings for a bluestone coping for this wall were also prepared, contract let and work supervised.

The plans were made for an enlarged service yard for the Rocking Stone Restaurant. This work was also laid out on the

ground, the stakes being renewed from time to time during the rock excavation and the building of the walls. A pair of ornamental gates were designed for the entrance to this yard, and they are now being made.

A preliminary survey was made of proposed roads and walks from West Farms to Pelham Parkway, through that portion of the Park lying easterly of the Bronx River and the newly acquired area.

Location plans were prepared, and the site of the Pavilion east of the river was staked out.

All work done in the Park during the year was plotted on the various record maps of the parks. The numerous details and routine work which always devolve upon an engineer were attended to by Mr. Beerbower, who has been entirely without assistance, except when in making surveys one or two men were detailed from the force of laborers.

Respectfully submitted,

WILLIAM T. HORNADAY,
Director.



YOUNG CHIMPANZEE, SUSIE

REPORT OF THE VETERINARIAN AND PATHOLOGIST

A STUDY of the statistics of the Medical Department for the past thirteen years brings me to the conclusion that the introduction of new blood into our collection is of vital importance to the maintenance of the high standard of the present and past. Many of our larger and more important mammals have been in confinement for more than a dozen years and have long since passed their prime. This applies particularly to our American elk and European red deer herds, and the African antelopes. Already orders have been placed for practically a new herd of Elk.

Tuberculosis.—Tuberculosis heretofore has been principally confined to the primates, but three cases of this disease have occurred in the Lion House during the past year. Two of these cases were in newly arrived African leopards confined in the studio cage, and which had never been exhibited.

Among the primates, one orang and several small monkeys died from generalized tuberculosis.

The form of tuberculosis in the carnivores is of the bovine type, while that of the primates, is always of the human type, the latter being the most difficult to guard against.

The general character of tuberculosis lesions, as seen in the primates, corresponds very closely to those characteristic lesions seen in human tuberculosis of the acute type, while the chronic tubercular lesions so frequently seen in the human are practically never seen in the monkey. The disease nearly always runs an acute course, the infected animal rarely living more than a few months after it contracts the disease. Several cases of tuberculosis were discovered in newly deposited animals, and these in animals which had been in captivity a number of months.

Gastro-Enteritis.—During the spring and early summer there were a considerable number of cases of acute gastro-enteritis among the hooved animals, particularly the Rocky

Mountain goats, musk-oxen and deer. A number of these cases were traced to irritating substances in the clover hay and alfalfa. There was a tendency in these cases to merge into a chronic inflammation of the large bowel, resulting in a chronic dysentery and finally death from malnutrition.

Fungi Poisoning.—There have been a number of deaths from feeding hay which had been improperly cured, or baled while damp. Mouldy hay and grain have long been notorious for producing urinary affections in ruminants, with excessive elimination of phosphates, extreme emaciation and weakness. The deer seem more susceptible to fungi or their products than any other group of animals. The symptoms, in these animals, in the early stages simulate rheumatic affections, but later paralysis of the hind quarters is one of the common manifestations, and this suggesting lesions of the spinal cord. In other cases there is a general paresis, the animal lying in a helpless condition for a number of days before death. In a few cases a profuse diarrhoea sets in which quickly terminates in death. The practical difficulties in the procuring of hay that is absolutely sound are the greatest that are encountered in any food supply with which we have to deal.

Gastritis and enteritis among the primates, as well as among the small mammals, caused fewer deaths than formerly, and when these affections are the result of errors in diet, great progress has been made in correcting these conditions. Several of the smaller bears have been affected with chronic gastritis. One Andes black bear died after suffering from this disease intermittently for several years.

Pneumonia.—Pneumonia among the primates, as well as in the small mammals, has been quite prevalent. Generally this disease results as a complication of some other disease, such as gastritis, or intestinal parasites. While more cases of pneumonia are seen during the spring and fall, it occurs, however, throughout the year.

Parasitic Diseases.—While most of the animals respond successfully to medication for the elimination of intestinal parasites, occasionally we lose a few from aggravated attacks. This is more frequently the case with the smaller mammals, such as raccoons, agoutis, armadillos and squirrels.

Among the larger carnivores, where the administration of vermicides have for a long period been a matter of regular routine, no fatality from intestinal parasites has occurred.

A Chapman zebra died as a result of an aneurism, and thrombus of the posterior aorta, due to worms. This is the second zebra lost from the same cause, the previous case occurring in 1907, in a Grant zebra.

Cage Paralysis.—The condition recognized as cage paralysis occurs principally among the smaller monkeys. This disease generally assumes a chronic form and the animals are chloro-formed before they enter upon the final stages of the affection, and as soon as they become no longer fit for exhibition purposes.

Actinomycosis.—No prong-horned antelopes have been brought to the Park during the year; consequently no cases of actinomycosis, or lumpy jaw, are to be recorded.

Distemper.—There were no cases of this disease among the animals during the year.

Rickets is not uncommon, especially among the small mammals, such as the opossum, raccoon, porcupine, armadillo, and ocelot; and when the disease assumes a chronic character, they soon become unfit for exhibition, and are consequently destroyed.

The large male giraffe which had been exhibited in the Park for about ten years died from heat apoplexy during the hottest day of the summer. A few months later the female Giraffe died suddenly from acute dilatation of the heart, having been found dead upon the keeper's arrival in the morning. The autopsy revealed an extreme fatty degeneration of the heart, and a parasitic affection of the liver of a chronic nature.

Several cases of acute nephritis and cystitis occurred among the deer, apparently induced by the exclusive feeding of alfalfa hay; the symptoms in these cases being the complete suppression of urine, with colicky pains and marked nervous irritability. Mild cases responded to treatment readily, but the more acute cases soon developed an acute toxemia, ending in death. The post-mortem lesions resembled the fungoid poisoning seen in the moss poisoning of caribou.

There were an unusually large number of animals which met violent deaths as a result of the fighting with cage or corral mates. These deaths occurred in coyotes, foxes, raccoons and fallow deer. A number of animals were destroyed on account of malnutrition and rickets, and as a result of breeding aged mothers in the herds of red deer and elk. Several fawns were lost as

the result of their being abandoned by their mothers during inclement weather.

The usual number of gifts of small animals, especially monkeys, were received during the year, which on examination were found quite unfit for exhibition purposes and consequently were treated to painless death. For instance, of the ten marmosets which died or were destroyed during the year, eight were found on arrival to be suffering from pneumonia, enteritis, rickets or cage paralysis. The same conditions were present in a number of sapajou monkeys deposited in the Park.

Respectfully submitted,

W. REID BLAIR, D. V. S.

REPORT OF THE PROSECTOR OF THE ZOOLOGICAL SOCIETY.

I BEG to submit the following report of the Prosector's Department of the New York Zoological Society, for the period from May 27, 1913, to February 14, 1914:

Material Received.—Two hundred and ten (210) animals have been received from the Zoological Park, distributed as follows:

| <i>Amphibians</i> | 5 | <i>Mammals</i> |
|-------------------|----|--------------------|
| <i>Reptiles</i> | | Marsupials |
| Lizards | 7 | Insectivores |
| Tortoises | 5 | Rodents |
| Snakes | 57 | Ungulates |
| Alligator | 1 | Carnivores |
| Birds | 48 | Primates |

Treatment of Material.—The routine treatment of the material has been an intra-arterial injection of the Lefkowski fluid on receipt of the animal at the laboratory. This has been followed on the succeeding day by a gelatin injection of the vascular system; after this a general examination of the body was made, and the pathological protocol taken when asked for by the medical department.

Use of Material.—The material has been used both for the general morphological investigation of the individual forms, and in furtherance of the special lines of research, now under way in the laboratory. The latter have comprised the following topics:

1. The Prosector and Professor Schulte have made an extensive addition to the research on the structure of the salivary glands, which has been carried on for a number of years previously. The new material received from the Society has added a number of highly important observations to this subject, which the department hopes to publish in the near future. A copy of the previous work on the salivary morphogenesis of the mammals is enclosed under separate cover for the Library of the Zoological Society.

2. In all cases the central nervous system of the animals received has been assigned to Dr. Frederick Tilney for research in that department. The material has been extremely valuable in furthering Dr. Tilney's highly important work on the hypophysis and on the morphology of the diencephalon.

3. The biliary and pancreatic ducts have been investigated by Dr. Brown and Dr. Sharp, the latter specializing on the finer structure of the pancreas in the sauropsids.

4. The ileo-colic junction has been studied in all cases and many new and valuable preparations have been added to the already existing series.

5. The lungs, in all cases in which their condition permitted it, have been used for continuing the study of the mammalian bronchial system and pulmonary artery.

6. The genito-urinary tract has been removed and the preparations added to the already existing series. Some important observations have resulted in this field.

7. In a large majority of the animals successful injection of the venous system has been obtained, and much valuable material secured, especially in the district of the post-cava, for continuing the work on this line, which has engaged the attention of the laboratory for a number of years.

8. The work of the winter has uncovered some very important facts in reference to specialized morphologic characters in contrasting the Old World monkeys with those of the New World. It is hoped that with further material a clearer insight may be obtained into the phylogenetic relations of these two Primate groups.

9. The bodies of the animals have been, whenever practicable, stored with a view toward the collection of material for future work on the muscles and on the peripheral nervous and vascular system. The preliminary injection with Lefkowski's fluid has made this very generally possible, by reason of the excellent preservation of the soft parts thus obtained. When the condition of the animal did not warrant its retention in the study collection, it has been used for the preparation of the bony skeleton.

10. While the above has been the general routine adopted, individual forms have, of course, been treated individually, according to the peculiarities of their structure.

Permanent Preparations.—The year's work has resulted in the production of between nine hundred and one thousand permanent preparations, the majority of which are ready to be mounted for museum and research purposes.

The question of transport of the material from the park to the anatomical laboratory has been fairly satisfactorily solved. The laboratory now assigns half of the time of one of the janitors for the purpose of calling daily at the park and collecting the smaller animals, which can be transported by hand. For the more bulky material a trip by the express wagon from the Bronx to the laboratory has been arranged, at a cost of \$5.00 per trip. The total expense to the laboratory thus amounts to about \$50.00 a month. It may perhaps be possible in the future to adopt a more economical arrangement, but until such time the value of the material and the importance of receiving it in good condition warrant us in assuming this expense.

The Prosector desires to express his sincere appreciation of the hearty co-operation offered by the Director, the Curators and the other members of the scientific staff of this Society. He is especially indebted to the head of the medical department, Dr. W. Reid Blair, for consistent and invaluable help in the work.

Respectfully submitted,

GEORGE S. HUNTINGTON.
Prosector, New York Zoological Society.

February 18, 1914.



SEINING PORPOISES (*TURSIOPS TURSIO*) AT CAPE HATTERAS FOR THE NEW YORK AQUARIUM

REPORT OF THE
DIRECTOR OF THE AQUARIUM
TO THE BOARD OF MANAGERS.

THE exhibits at the New York Aquarium during the year 1913 have been as extensive and varied as the character of the building permitted. It will not be possible to enlarge the present collections until a larger building is available. By adapting the collections to the limits of the four water systems available it is now possible to keep a fairly good collection of aquatic animals, with losses reduced to the minimum. No additional water systems for the keeping of other kinds of aquatic exhibits can be installed under present conditions. Not only is all exhibition space fully occupied, but there is no space available for additional pumps, piping or other equipment.

The Aquarium is entirely lacking in a system of cold, stored sea-water suitable for the keeping of northern marine invertebrates. Such animals of this kind as are exhibited are maintained in the cold, but otherwise brackish and impure, water pumped from the harbor and this water supply has its limitations.

The interior of the exhibition hall has been improved somewhat by additional painting. Expenses for the repair and improvement of the extensive plumbing of the building have been larger than usual. These included extensive repairs to the refrigerating plant. Boilers, pumps and pipe lines are now believed to be in good condition.

Early in the summer it was thought best to eliminate gas from the building and add more electric lights, with the result that the exhibits in the tanks can be seen to better advantage on dark days at no greater cost.

During the summer season the Aquarium was kept open until six o'clock in the evening, by a special arrangement with the attendants, without extra cost for this service.

In December the plans for the new building were accepted by the city and placed on file in the Department of Parks, the architect receiving from the city full payment for his services in connection with the plans prepared. Copies of the more impor-

tant plans were placed on file with the New York Zoological Society, and another set was reserved for the use of the Director of the Aquarium. A splendid model of the proposed new building has been on exhibition for several months in the American Museum of Natural History. There is little hope that the city will undertake the erection of a new building at the present time.

Dr. G. A. MacCallum of New York continued during the year his investigations relative to the causes of death in fishes sent to him from the Aquarium. His work is largely a study of the parasites found in such specimens and will, when completed, throw much light on the subject of the causes of death of fishes in captivity.

Dr. George G. Scott, of the College of the City of New York, continued at the Aquarium his studies of the blood of fishes with regard to osmotic pressure, and salt content. More recently he has been studying the vitality of fishes in relation to the amount of oxygen and carbon dioxide in the water.

Prof. C. F. W. McClure, of Princeton, was supplied by the Aquarium with trout embryos for use in his studies of the origin of the lymphatic system.

The Aquarium has continued to assist teachers in the public schools in maintaining small salt water aquaria in their classrooms. This work has been going on for many years and is highly appreciated by the teachers. Several hundred aquaria have been stocked since this was undertaken and the cost has been small, as the specimens supplied could readily be brought in from the adjacent seashore by the Aquarium collector.

The exhibits of the Aquarium are supplied at the expense of the New York Zoological Society, the specimens received from other sources constituting a very small proportion of the total collections. Among the gifts which should be mentioned are the important contributions of fish eggs for the Aquarium hatchery, presented by the United States Bureau of Fisheries. These included brook, rainbow and black-spotted trout, whitefish, silver and land-locked salmon, yellow and pike perch.

The young fishes hatched were, as usual, liberated in New York State waters.

Fish eggs were also presented by the Tuxedo Club, through Mr. Edwin C. Kent. A collection of local fishes was received from the New Jersey Fish Commission. The porpoises referred

to elsewhere were presented by Mr. Joseph K. Nye, of New Bedford, Massachusetts. A complete list of accessions will be found elsewhere.

COLLECTIONS.

The Aquarium has at present on exhibition two hundred species of fishes and other aquatic forms of life, represented by 6,700 specimens, not including the large number of fry annually turned out by the fish hatchery. Exchanges of fresh water fishes were made with the Aquariums in Detroit, Philadelphia and Boston.

The collection of fresh water fishes is made up from various sources. Many of the commoner species have been obtained by the Aquarium collector from lakes in the parks of New York and Brooklyn and from the Bronx River. Other specimens have been obtained from Government and States fish hatcheries. A few collecting trips have been made to suitable points in New York and New Jersey, by permission of State fishery boards.

About half of the hundred tanks of the Aquarium are devoted to fresh water species, many of which, such as gar, sturgeon, bow-fin and muskallunge, have lived in the building many years. The attractive exhibit of large Japanese goldfishes has long been maintained through the gifts of Henry Bishop of Baltimore, and E. K. Bruce of Thornburg, Iowa. The local sea fishes are obtained by the Aquarium collector from pound nets in the vicinity of New York City, and are also brought from the ocean fishing banks on the fishing steamers "Cleremont" and "Taurus." Certain of the larger sea fishes are brought in motor boats by fishermen operating pound nets in the vicinity of Port Monmouth, N. J. Collections of tropical fishes are annually brought by steamer from Florida and Bermuda. The latter, on account of their showy colors, are perhaps the most attractive exhibits of the Aquarium.

The collection of turtles, salamanders and frogs, while not large, contains most of the species found in the eastern United States. A number of rare and interesting turtles not hitherto exhibited at the Aquarium were obtained from the upper Amazon River through the co-operation of the Booth Steamship Line, whose vessels reach those waters direct. Three large Japanese salamanders (*Cryptobranchus*) and some cave salamanders (*Proteus*) were procured from Europe. Four species of sea turtles, mostly large specimens, have lived in the Aquarium for



C. H. Townsend, Photo.

PORPOISES (*TURSIOPS TURSIO*) FOR THE NEW YORK AQUARIUM.
Cape Hatteras, N. C. November 21, 1913.



TANKS CONTAINING PORPOISES READY FOR SHIPMENT
TO NEW YORK AQUARIUM.

several years. Specimens of lung fishes and electric eels have been secured and are now awaiting shipment from Brazil.

Three specimens of a remarkably showy fish from the upper Amazon River (*Pterophyllum scalare*), obtained last fall, are alive and doing well. This species is as oddly shaped and strangely marked as though it had been found among the coral reefs of Polynesia.

During the past year an especially attractive exhibit of sea-horses has been maintained. There are at present probably not less than two hundred of these interesting fishes being exhibited in two good sized tanks.

In the fall a special effort was made to stock all reserve tanks for the winter, and there is now, both in the exhibition and reserve tanks, a collection sufficiently large to insure good exhibits against ordinary losses for several months. The large reservoir of stored sea water, which has been in use for five years, is a most valuable asset, and the keeping of a large amount of aquatic life in restricted quarters is now possible with very moderate losses. We may safely claim success in providing good living conditions for our large collection of aquatic forms.

Aside from the school of porpoises, the only mammal on exhibition at the Aquarium is the California sea lion, which has been here about five years. The Aquarium has not lately attempted to keep other species of seals or the manatee, for the reason that large lung-breathers cannot be properly accommodated in the matters of pure air, light and space, in the present building.

Among the tropical fishes brought in during the year were several species either new to science or not previously exhibited at the Aquarium. Among these may be mentioned a new species of blue parrot-fish (*Pseudoscarus plumbeus*), known only by three specimens from Florida and Bermuda. Two additional specimens of a new and remarkably beautiful species of parrot-fish (*Angelichthys*) were obtained from Key West. The species has hitherto been known from a single specimen.

Other rare species to be mentioned in this connection are a batfish (*Ogcocephalus radiatus*), the catalufa (*Priacanthus arenatus*), a ray (*Urolophus jamaicensis*), a snapper (*Neomaenius ambiguous*), the amarillo (*Caranx bartholomaei*), the Key West red parrot-fish (*Spurisoma xystodon*), a trunk fish (*Lacto-*

phrys bicaudalis), and the French angelfish (*Pomacanthus paru*). The cave salamander of Europe (*Proteus anguineus*), and the remarkable fish from the upper Amazon (*Pterophyllum scalare*), above referred to, are also new to the exhibits of the Aquarium.

In the Director's report for last year there was published a list of all species of aquatic animals which have been exhibited at the Aquarium since its inception. This list enumerated 379 species of vertebrate animals and has been materially increased by the exhibits of the past year. The total number of species of vertebrates now in the Aquarium is considerably larger than for last year. During the year as many kinds of invertebrates were kept on exhibition as the space available permitted.

The Prince of Monaco, a noted authority on marine life, who visited the Aquarium in October, expressed his surprise at the quantity and variety of living marine exhibits maintained in our single exhibition hall. The Director of the Aquarium presented numerous living specimens of the large American horseshoe crab (*Limulus*) to the Prince of Monaco, which are now in his Aquarium in the Oceanographic Museum at Monaco. The Prince requested copies of all publications of the Zoological Society relating to the New York Aquarium, and these were furnished by the Director.

PORPOISES.

Two attempts were made during the year to obtain live porpoises for the large central pool of the Aquarium, which has a diameter of 37 feet and a depth of 7 feet. The first shipment was made in June, when six porpoises were sent from the porpoise fishery at Cape Hatteras. Contrary to the instructions given, the animals were forwarded dry and four of them died before the shipment reached Norfolk, Virginia. The two survivors were there placed in water and brought to the Aquarium alive. One of these lived two and one-half months, but finally died from injuries resulting from its long journey without the support and cooling medium of water.

Although porpoises give no special signs of distress when carried dry, they become greatly heated and develop large blisters, which later become very serious sores, extending through the blubber and into the flesh.

Believing that porpoises would live much longer if properly handled, the Director went to Cape Hatteras in November and

succeeded in bringing to the Aquarium nine live porpoises. The four younger animals, averaging about five feet in length, lived only a few days; but the five adults, averaging about eight feet in length, are still alive and appear to be thriving (March 15, 1914).

These animals were captured with a large seine and, as soon as dragged out on the beach, were placed in a salt water pond for twenty-four hours, when they were transferred to narrow, eight-foot wooden tanks containing sufficient water to cover them. Porpoises are blubber-covered animals and develop enough heat to raise the temperature of the water so that it was necessary to renew the cold water in the shipping tanks about every six hours. The adults give little trouble during shipment, while the young are exceedingly restless.

The United States Weather Bureau kindly furnished a table of mean temperatures of the ocean water at Cape Hatteras, where large numbers of porpoises spend the winter, and these temperatures—50 to 55 degrees Fahrenheit, have been maintained in the large pool at the Aquarium where the porpoises are kept.

For a few days they did not feed at all, but soon began to take live fishes. A couple of weeks after their arrival they were feeding freely on herring and tomcods purchased in the market and this has been their principal food ever since, the five animals consuming about ninety pounds a day. They are very lively and keep swimming actively day and night. They frequently indulge in the familiar porpoise play, leaping entirely out of the water. Within the past month they have given evidence that they will breed in captivity if their lives are not shortened by their present indoor life.

The porpoises now in the Aquarium are the only ones in captivity, and constitute the most interesting exhibit to the general public ever made in the Aquarium. The specimens were presented on the beach by Mr. Joseph K. Nye, of New Bedford, Massachusetts, the proprietor of the Hatteras porpoise fishery, and were brought to New York at the expense of the New York Zoological Society. The entire cost of placing these porpoises in the Aquarium was less than two hundred fifty dollars.

Mr. Sanborn, of the Zoological Park, was successful in making excellent motion pictures, showing the entire process of capturing and transferring the porpoises, and the pictures were exhibited at the annual meeting of the Zoological Society to an

audience of more than one thousand persons. Numerous photographs of the porpoise fishery were also secured. Mr. Nye also presented the porpoises sent to the Aquarium in June.

The keeping of porpoises in captivity has presented some difficulties with the water supply, as their abundant excrement tends to discolor the water. The pool cannot be drained empty daily and cleaned, like those used for seals, as stranded porpoises beat the ground with their tails so fiercely that they would be injured by the emptying of the pool. The water is now being kept fairly clear by carrying extra pipe lines to the pool and greatly increasing the flow of water. They are being kept in the brackish and rather foul water pumped from the Harbor, as it is not practicable to supply them with pure sea water from our large storage reservoir, on account of the fact that they would rapidly discolor the pure water so important to the health of the large collection of marine fishes in the Aquarium. The necessity of keeping them in the harbor water and exhibiting them in a public exhibition room which has to be heated during the winter, makes it impossible to exhibit them under the most favorable conditions; but it is a great satisfaction to be able to report that the animals are apparently doing well.

All of our specimens are of the "bottle-nosed" species (*Tursiops tursio*). This is the only species ever taken at the Hatteras fishery, and Hatteras, singularly enough, is the only place in North America where it is practicable to drag porpoises to the beach with seines. The type of seine used is made of extra heavy twine and is about one thousand feet long. The fishery is maintained for the sake of both oil and hides.

The porpoises, which died, were presented by the Zoological Society to the American Museum of Natural History, the College of Physicians and Surgeons, and the Museum of Comparative Zoology at Harvard University.

ATTENDANCE.

The attendance at the Aquarium increases slowly from year to year. The total number of visitors for the year 1913 was 2,205,729, an average of 6,043 per day—an increase in attendance over the year 1912, amounting to 61,374. The largest monthly attendance was that of August, 271,468, an average of 8,757 for the month.

The total attendance for the 17 years since the Aquarium was opened to the public is 34,939,508. The annual number of

visitors at the Aquarium is, so far as known, greater than that of any other public museum of any kind in the world.

It is an interesting fact that the attendance at the Natural History Museum and the Art Museum in New York City remains nearly stationary, notwithstanding the great size and almost priceless values of their respective collections. The Aquarium can make no increase in its exhibits in the present building and its collections represent no money value of importance. The fact that its attendance increases to an important degree is a source of gratification.

ATTENDANCE AT THE NEW YORK AQUARIUM.

| | | | | |
|-------------------------|---------------|-----------|--------------------|-------|
| January | Visitors..... | 126,931 | Daily average..... | 4,094 |
| February | " | 116,614 | " " | 4,164 |
| March | " | 155,458 | " " | 5,014 |
| April | " | 162,548 | " " | 5,418 |
| May | " | 188,828 | " " | 6,091 |
| June | " | 225,000 | " " | 7,500 |
| July | " | 248,326 | " " | 8,000 |
| August | " | 271,468 | " " | 8,757 |
| September | " | 215,114 | " " | 7,170 |
| October | " | 197,265 | " " | 6,363 |
| November | " | 151,763 | " " | 5,058 |
| December | " | 146,414 | " " | 4,723 |
| <hr/> | | <hr/> | | |
| Total | " | 2,205,729 | " " | 6,043 |
| <hr/> | | <hr/> | | |
| Total for 17 years..... | | <hr/> | | |
| | | <hr/> | | |
| 34,939,508 | | | | |

THE NEW YORK AQUARIUM NATURE SERIES.

The officers of the Aquarium have from time to time prepared works relative to marine life, which have been placed on sale in the building and have been sold at a profit. The latest pamphlet of this series is entitled: "The Care of Home Aquarium," and was prepared with the view of meeting the continual inquiry from correspondents of the New York Aquarium on this subject.

At the suggestion of the Director, Dr. Osburn, the author, devoted the whole of Bulletin No. 50, New York Zoological Society, March, 1912, to the subject of The Balanced Aquarium. This Bulletin, like other Aquarium numbers, was placed on sale

in the building and was soon exhausted. The matter in the Bulletin has been largely rewritten in preparing the new pamphlet, which will be kept permanently on sale for the benefit of the public. This is the third attempt that has been made at the Aquarium to supply such information. The original papers, prepared by the Director some years ago, have passed through two editions, but did not enter into the matter with sufficient detail. Inquiry regarding small aquaria is still the principal subject in the correspondence directed to the institution.

Other pamphlets in continuation of this series are in preparation. One of these will relate to the natural history of the Bottle-nosed Porpoise, a species now attracting great interest as one of the exhibits of the Aquarium. Another will be devoted to the collection of tropical fishes from Florida and Bermuda. All of these documents are abundantly illustrated from photographs of our own exhibits. The illustrations, having appeared at various times in the Zoological Society Bulletin as half-tone cuts, are now available for the nature series without extra cost. The numbers already issued are: "Seashore Life," Mayer; "The Cultivation of Fishes in Ponds," Townsend; "Changes in Color among Tropical Fishes," Townsend; "Chameleons of the Sea," Townsend; "The Northern Elephant Seal," Townsend; "The Care of Home Aquaria," Osburn. Another number in press is: "The Porpoise in Captivity," Townsend.

The profits derived from the sale of these documents, as well as from the sale of bulletins and postcards, are devoted to the publication fund of the Aquarium. During the year the funds derived from such sources amounted to \$877.71. The sale of postcards has been large enough to warrant the addition of a new series of cards.

Respectfully submitted,

C. H. TOWNSEND,
Director.

List of Gifts
TO THE ZOOLOGICAL SOCIETY

From January 1, 1913, to January 1, 1914.

AITKEN, HARRY W., Philadelphia, Pa.:
 Gopher Tortoise.

ALLATIN, JOSEPH W., Long Island City, N. Y.:
 Rough-Legged Hawk.

ALLEN, Miss JEAN, New York City:
 Alligator.

AMES, CATHARINE G., New York City:
 Tovi Parrakeet.

AMMANN, MASTER JOSEPH, New York City:
 Common Box Tortoise (2 specimens).

ANDERBERG, Miss JUDITH M., Brooklyn, N. Y. C.:
 Mexican Red-Bellied Squirrel.

ANDERSON, WILLIAM, Brooklyn, N. Y. C.:
 Wilson Thrush.

ANGER, LUDWIG G., New York City:
 Screech Owl.

ANTHES, MASTER EDWIN, Mamaroneck, N. Y.:
 Alligator.

ARCHER, D. H., Brooklyn, N. Y. C.:
 Alligator.

ARCHER, LESTER E., New York City:
 Gray Fox.

ARCHIBALD, WALTER, New York City:
 1 Black Snake, 2 Water Snakes.

ARROYO, J. A., Sheepshead Bay., L. I., N. Y.:
 Troupial (2 specimens).

ASHLEY, G., Mount Vernon, N. Y.:
 Belted Kingfisher.

AUSTIN, E. H., Gaylordsville, Conn.:
 Wood Tortoise (3 specimens).

AVIARY AND AQUARIUM PARK, Los Angeles, Cal.:
 13 California Toads, 11 California Newts, 9 Pacific Rattlesnakes, 8 California Bull Snakes, 6 California Garter Snakes, 5 Keeled Lizards, 5 Boyle's King Snakes, 2 Turtles, 2 Atrox Rattlesnakes, 2 Red Racersnakes, 1 Blue-Tailed Lizard, 1 Tiger Rattlesnake, a batch of Lizards.
 Total, 65 specimens.

BAKER, S. P., Patchogue, L. I., N. Y.:
 Rhesus Monkey (2 specimens).

BARDS, JOHN, New York City:
 Common Marmoset.

BARNETT, RALPH, Olanta, Pa.:
 Woodchuck (2 specimens).

BAUER, Mrs. A. J., New York City:
 Tovi Parrakeet.

BAUMANN, CHARLES, New York City:
 Alligator.

BEACH, REX, New York City:
 Margay Cat.

BECHTEL, W. A., New York City:
 1 Tawny Robin, 1 Song Thrush.

BEDFORD, MR., New York City:
Giant Centipede.

BEHR, HOWARD S., Hastings-on-Hudson, N. Y.:
Common Turtle Dove (2 specimens).

BELL, B. F., Scarsdale, N. Y.:
Snapping Turtle.

BELL, E. L., Flushing, L. I., N. Y.:
4 Rattlesnakes, 3 Box Tortoises, 2 Water Snakes, 1 Garter Snake, 1 Ribbon Snake. Total, 11 specimens.

BELL, MASTER E. LAYTON, Flushing, L. I. N. Y.:
Brown Snake (9 specimens).

BELL, DR. GEORGE N., Hartford, Conn.:
Marmoset (2 specimens).

BENNETT, D. L., Plainfield, N. J.:
Flying Squirrel (3 specimens).

BERESWILL, F., Yonkers, N. Y.:
Wood Duck.

BERLS, JR., ROBERT, New York City:
Alligator.

BERNSEE, C. D., Springfield, Mass.:
Curassow (2 specimens).

BIGGERS, MISS EDNA W., Maysville, Ky.:
Central American Boa.

BIRCHALL, MRS. FREDERICK T., Kingsbridge, N. Y.:
1 Song Thrush, 1 European Skylark.

BLACKBURN, WALTER, Yonkers, N. Y.:
White-Tailed Deer.

BONAT, MRS. M. L. L., Middletown, Newport, R. I.:
Peacock.

BOUGHTON, MASTER ED. M., New York City:
Common Opossum.

BOY SCOUTS, FIRST SAINT GEORGE TROOP OF (through the Public Museum of the Staten Island Association of Arts and Sciences), New Brighton, S. I., N. Y.:
Red-Shouldered Hawk.

BOYD, C. L., Waynesboro, Tenn.:
Timber Rattlesnake (2 specimens).

BOYDE, JOHN, New York City:
Pea Dove (2 specimens).

BROOKLYN PARK DEPARTMENT, SECRETARY OF, Brooklyn, N. Y.:
Ocelot.

BROWN, E. C., Copake, N. Y.:
Turtle.

BROWN, MASTER LEOPOLD, New York City:
Alligator.

BURTCHELL, VERDI, Branchport, N. Y.:
Cooper Hawk (2 specimens).

CAREY, E. V., Lyne, Capel, Surrey, England:
Hybrid Muscovy-Rouen Duck (2 specimens).

CARSON, KENNETH W., New York City:
Northern Parula Warbler.

CHADWICK, GORDON, Highmount, N. Y.:
Salamander.

CHAPHAM, MRS. E. Y., New York City:
Canary (2 specimens).

CHAPMAN, MRS., New York City:
Yellow-Headed Amazon Parrot.

CIMILLO, DR., New York City::
Woodcock.

CLOWRY, R. C., Tarrytown, N. Y.:
 Opossum (2 specimens).

COE, MISS M. S., New York City:
 Skylark.

COLAIZZIS, A., New York City:
 Vervet Monkey.

COLLINS, MASTER J. PALMER, Rutherford, N. J.:
 Horned Toad.

CONSERVATION COMMISSION OF THE STATE OF NEW YORK (through Mr. Hicks),
 Albany, N. Y.:
 Frog (73 specimens).

CRAWFORD, MRS., New York City:
 Great White Cockatoo.

CRAWFORD, C. E., Rosebank, S. I., N. Y.:
 Marmoset.

CRONAU, RUDOLPH, New York City:
 Box Tortoise (2 specimens).

CRONENMEYER, MISS ETHEL, New York City:
 Fence Swift.

DALTON, MRS. LENA, New York City:
 Brown-Throated Parrakeet.

DEANE, DR. HENRY F., New York City:
 Alligator.

DELANOY, CAPTAIN CHARLES E., New York City:
 Green Monkey.

DE WOLFE, MISS ELSIE, New York City:
 Alligator (2 specimens).

DILLER, DR. WILLIAM E., New York City:
 Vervet Monkey.

DONALDSON, G. M., New York City:
 Alligator.

DOUGHTY, W. H., Brooklyn, N. Y. C.:
 Tree Snake (2 specimens).

DU PONT, MRS. ALFRED I., Wilmington, Del.:
 White-Nosed Coati-Mundi.

EATON, HOWARD, WOLF, Wyo.:
 American Magpie (19 specimens).

EGGELING, OTTO, New York City:
 Weather Fish (4 specimens).

EHRHARDT, THEODORE W., Brooklyn, N. Y. C.:
 Canary.

EICHEN, OSCAR, UNIONPORT, N. Y.:
 Green Heron.

ENDERS, MISS GERTRUDE, New York City:
 Box Tortoise.

ERHRLIEL, J. B., Bainbridge, Ga.:
 Wild Cat.

ETTINGER, MRS., New York City:
 White Rabbit.

SELLER, MRS. MARGARET, New York City:
 1 Canary, 1 Java Sparrow.

FIELD, WILLIAM B., New York City:
 Cuban Parrot.

FISH AND GAME COMMISSIONERS OF NEW JERSEY (through Hon. Ernest Napier,
 President), East Orange, N. J.:
 Horned Owl (4 specimens).

FLANNAGAN, DALLAS, Montclair, N. J.:
 White-Throated Sapajou.

FOLEY, T., New York City:
 Diamond-Backed Rattlesnake (2 specimens).

FOLLETTI, MRS. H. R., Norwich, N. Y.:
 Macaw (2 specimens).

FRANKLIN, D., New York City:
 Tiger Salamander (4 specimens).

FREEL, THOMAS F., New York City:
 1 Coachwhip Snake, 1 Indigo or Gopher Snake.

FRENCH, DR. CECIL, Washington, D. C.:
 Sharp-Tailed Grouse.

FRITCH, M. and W. HERBST, New York City:
 Canary (2 specimens).

FUREY, JOHN, New York City:
 Canary-American Goldfinch Hybrid.

GARREY, DR. W. E., St. Louis, Mo.:
 Common Tern (2 specimens).

GENNERICH, Miss, New York City:
 Rabbit.

GERSHOY, ALEXANDER, New York City:
 Box Turtle.

GIBBS, C. J., New York City:
 Six-Banded Armadillo (4 specimens).

GILLAM, ARTHUR L. and E. L. BELL, Flushing, L. I., N. Y.:
 Rattlesnake (4 specimens).

GORMAN, MRS. J., New York City:
 Alligator.

GRANT, MRS. J. R., San Francisco, Cal.:
 Striped Frog (5 specimens).

GRANT, MRS. U. S., New York City:
 Yellow-Bellied Terrapin.

GREEN, A. O., New York City:
 Common Opossum.

GRIFFEN, E. B., New York City:
 Alligator.

GROVER, A. B., Indianapolis, Ind.:
 White-Faced Sapajou.

GULZONE, CHARLES, Secaucus, N. J.:
 Ring-Necked Pheasant.

HAAS, G. C., Mount Kisco, N. Y.:
 Sapajou Monkey.

HABRESS, MRS. J., New York City:
 Canary (2 specimens).

HAGENBECK'S SONS, CARL, Hamburg, Germany:
 7 Millepedes, 6 Tumble Bugs, 3 Chinese Tortoises, 2 River Snakes, 2 Leaf
 Insects. Total, 20 specimens.

HAMBURGER, MISS LUCILLE, New York City:
 Painted Turtle.

HANDY, MRS. PARKER D., New York City:
 American Goldfinch.

HARMON, MRS., Greenwich, Conn.:
 Cinnamon Sparrow-Hawk.

HARRINGTON, JR., A. W., Stockbridge, Mass.:
 English Pheasant (3 specimens).

HARRIS, MRS. New York City:
 White-Faced Sapajou Monkey.

HARRIS, MRS. ROLLA, Brooklyn, N. Y. C.:
 Alligator.

HART, FRANK, Doylestown, Pa.:
 White Crow.

HEIPLER, Mr., New York City:
1 English Ring-Necked Pheasant, 5 Black Rats.

HERBERT, SAMUEL, New Lisbon, N. J.:
Pine Snake (2 specimens).

HERBST, W. and M. FRITCH, New York City:
Canary (2 specimens).

HERBST, MASTERS JUSTIN and WILLIAM, New York City:
Guinea Pig (5 specimens).

HERMAN, A., New York City:
Bull Snake.

HERRON & COMPANY, INC., William, New York City:
American Bittern.

HESS, GEORGE, New York City:
Homing Pigeon.

HILBERT, J., New York City:
Pectoral Sandpiper.

HILSDORF, Mrs. R., New York City:
1 Alligator, 2 Painted Turtles.

HOECH, MASTER ARMIN, New York City:
A batch of Water Snails.

HOFFMAN, JOSEPH M., New York City:
Woodcock.

HULBERT, LOUIS, New York City:
Painted Turtle.

HULSE, R. J. E., New York City:
2 Yellow-Winged Sugar-Birds, 1 Purple Sugar-Bird, 1 Black-Necked Eu-
phonia, 1 Green-Backed Tanager. Total, 5 specimens.

HURTER, SR., JULIUS, St. Louis, Mo.:
Coachwhip Snake.

ILLICH, MASTER HAROLD, New York City:
Alligator (4 specimens).

JACOBSON, HJALMAR, New York City:
Flicker.

JIMENEZ, MISS F., Mount Vernon, N. Y.:
Marmoset (2 specimens).

JOHNSON, J. M., Lenoir, N. C.:
Banded Rattlesnake.

KANE, Mr., Little Falls, N. Y.:
Holboell Grebe (2 specimens).

KEILLER, W. L., Chief Officer, S.S. "African Prince," Brooklyn, N. Y. C.:
Greenland Gyrfalcon.

KING, W. A. SNAKE, Brownsville, Texas:
Centipede.

KINNEY, MORRIS, Butler, N. J.:
Great Horned Owl.

KIRBY, DR. W. W., New York City:
Central American Boa.

KNEESHAW, J. F., New York City:
Banded Rattlesnake.

KOENIGER, MISS CLARA, New York City:
Blue-Fronted Amazon Parrot.

KUNHARDT, GEORGE FARNHAM, New York City:
Ocelot.

KURASCH AND RAVITCH, New York City:
Raccoon.

KUSER, COL. ANTHONY R., Bernardsville, N. J.:
2 Elliot Pheasants, 2 Sonnerat's Jungle Fowl, 1 Javan Jungle Fowl, 1 Great
Horned Owl, 1 Red-Tailed Hawk. Total, 7 specimens.

LANE, ARTHUR B., St. James, L. I., N. Y.:
Cottonhead Marmoset (2 specimens).

LANE, JR., JAMES W., St. James, L. I., N. Y.:
2 Bengalese, 2 Cut-Throat Finches, 2 Zebra Finches, 2 Long-Tailed Grass-finches, 1 Red-Billed Hill-Tit, 1 Yellow-Fronted Amazon Parrot, 1 Canary-Goldfinch Mule. Total, 11 specimens.

LANG, WILLIAM T., New York City:
Blacksnake.

LELLIOTT, HARRISON G., New York City:
Albino Squirrel.

LEMON, MADAM MARGUERITE, New York City:
Alligator.

LENT, W. B., Salt Point, N. Y.:
Rabbit.

LEON, SOPHIE, New York City:
Canary.

LETKEMANN, MASTER HERKUS, W. V., New York City:
4 Fence Swifts, 2 Painted Turtles, 1 Box Tortoise, 1 Meadowlark. Total, 8 specimens.

LIGUORI, E. M., New York City:
Red-Shouldered Hawk.

LINK, MRS. A., New York City:
Domestic Pigeon (2 specimens).

LINDEMANN, MASTER HENRY, Westchester, N. Y. C.:
Painted Turtle.

LINDSAY, MAURICE, Tenafly, N. J.:
Yellow-Naped Amazon Parrot.

LINN, MASTER JOHN WINTHROP, New York City:
Alligator.

LORING, J. ALDEN, Owego, N. Y.:
Wood Tortoise.

LYON, E. H. (through F. C. Heath), Englewood, N. J.:
Alligator.

McCARTHY, MRS. DANIEL F., Bronxville, N. Y.:
Spotted Salamander.

McCARTHY, THOMAS, New York City:
Opossum.

McILHENNY, EDWARD A., Avery Island, La.:
4 Diamond-Backed Water Snakes, 2 Banded Rainbow Snakes, 1 Horned Snake. Total, 7 specimens.

MCKINLEY, DR. F. J., Pala, Cal.:
Rubber Boa.

MCQUAKER, ROBERT, Union Hill, N. J.
Alligator.

MAGUIRE, MRS. J. D., New York City:
Alligator (4 specimens)

MAHONEY, EDWARD, Yonkers, N. Y.:
A batch of Silk Worms.

MANSELL, DAVID A., New York City:
Raccoon.

MARCKRES, GEORGE M., Sharon, Conn.:
Red-Throated Loon.

MARTIN, Miss, New York City:
Rhesus Monkey.

MASON, MRS. LAWRENCE B., Cranford, N. J.:
Blue-Fronted Amazon Parrot.

MAST, R. O., Nepera Park, N. Y.:
Java Monkey (2 specimens).

MENCHEN, THEODORE, Jamaica, L. I., N. Y.:
2 Spotted Salamanders, 1 Black Snake.

MERCKE, MRS. CARLA, New York City:
Alligator.

MERGOLIES, MASTER HARRY, New York City:
Snapping Turtle.

MERZBACH, MRS. LOUIS, New York City:
Flicker.

MILLS, MASTER JOHN, New York City:
1 Painted Turtle, 1 California Newt.

MILLWARD, RUSSELL HASTINGS, Belize, British Honduras, C. A.:
3 Golden Agoutis, 1 Peccary, 1 Variable Squirrel, 1 Spider Monkey, 1 White-Nosed Coati-Mundi, 1 Kinkajou, 1 Paca. Total, 9 specimens.

MOELLER, GEORGE, Winfield, L. I., N. Y.:
Red-Shouldered Hawk.

MOORE, JAMES B., New York City:
1 Blue Mocking-Thrush, 1 Cuban Robin.

MORGAN, C. W., New York City:
Mexican Tree Snake.

MORRIS, C. H., McConnelsville, Ohio:
Red-Tailed Hawk.

MOTT, MISS IRENE, Quebec, Canada:
Blue-Fronted Amazon Parrot.

MURPHY, MARIE, New York City:
Alligator.

MUTH, MISS F., New York City:
Coyote.

MYERS, MASTER OGDEN KING, New York City:
Alligator (2 specimens).

NAEGELEN, JOE, New York City:
3 Central American Boas, 2 Dipsas Tree Snakes, 2 Tree Snakes, 1 Tarantula. Total, 8 specimens.

NELSON, MRS. J., New York City:
Blue-Fronted Amazon Parrot.

NEW YORK AQUARIUM, New York City:
Milk Snake.

NEW YORK TANNING EXTRACT COMPANY (through W. F. Dougherty), New York City:
Tegu.

NICOLAI, ARTHUR, Hartsville, Mass.:
Marsh Hawk (2 specimens).

NORCROSS BROS. CO., Stony Creek, Conn.:
Red-Shouldered Hawk (2 specimens).

NORTON, CHARLES ELIOT, New York City:
2 Gray Java Sparrows, 2 African Waxbills.

O'CONNELL, DR. JOSEPH J., New York City:
Tarantula.

OLIVER, CAPTAIN, S.S. "Eastern Prince," N. Y. C.:
1 Red Coati-Mundi, 1 Common Marmoset.

PACKARD, MRS. A. W., Greenwich, Conn.:
Blue-Winged Parrotlet (2 specimens).

PAINTER, K. V., Cleveland, Ohio:
2 European Spoonbills, 2 Indigo Buntings, 2 Gray Buntings, 2 Mexican House Finches, 2 Ruppell Chestnut Weavers, 1 Ashy-Bellied Drongo, 1 Austere Macaw, 1 Catbird, 1 Bluebird, 1 Redwing, 1 American Goldfinch, 1 Lark Sparrow, 1 Red-Billed Weaver, 1 Daurian Redstart. Total, 19 specimens.

PARDEE, ROY E., New York City:
Alligator (6 specimens)..

PARKER, E. K., Mount Vernon, N. Y.:
Common Opossum.

PARSHALL, Mrs. LISETTE, Lyons, N. Y.:
Blue-and-Yellow Macaw.

PATHE FRERES, Hoboken, N. J.:
Red Fox.

PERKENS, A. C., New York City:
Horned Toad.

PERRIOR, A. W. and FRED. G. SAXTON, Syracuse, N. Y.:
Screech Owl.

PETERS, C. A., Brooklyn, N. Y. C.:
7 Painted Turtles, 2 Spotted Turtles. Total, 9 specimens.

PHILLIPS, Mrs. ARTHUR, Darien, Conn.:
Roseate Cockatoo (2 specimens).

PINSKY, JOSEPH, New York City:
Saw-Whet Owl.

PLEASANTS, Mrs. I. B., New York City:
Starling.

POLLARD, C. L., New Brighton, S. I., N. Y.:
Red-Shouldered Hawk.

PRILLWITZ, Miss ESTELLA, New York City:
Box Turtle.

PUVOGEL, H., Hicksville, N. Y.:
Red-Tailed Hawk (2 specimens).

PYNE, M. TAYLOR, Princeton, N. J.:
Mouse Deer.

PYNE, Mrs. M. TAYLOR, Princeton, N. J.:
Diana Monkey.

PYNE, JR., M. TAYLOR, Princeton, N. J.:
Alligator.

RAGOT, CHARLES L., Hoboken, N. J.:
1 Green Snake, 1 Box Tortoise.

RAMSDEN, CHARLES T., Guantanamo, Cuba:
5 Ruddy-Shouldered Blackbirds, 5 Cuban Ground Doves, 4 Yellow-Faced Grassquits, 4 Ruddy Quail-Doves, 2 Blue-Headed Quail-Doves, 1 Scaly-Necked Pigeon, 7 Hütias or Cuban Tree Rats. Total, 28 specimens.

RECHT, W. S., New York City:
Yellow-Tailed Oriole.

REEVE, Dr., New York City:
Woodcock.

RIBA, SAMUEL, New York City:
Alligator.

RICE, G. W., Pelham, N. Y.:
Opossum.

RICHARDSON, E., New York City:
Mangabey Monkey.

RIES, G. W., Bernarold, Texas:
Nine-Banded Armadillo.

RIES, WILLIAM, New York City:
Texas Rattlesnake (3 specimens).

RIGBY, LAURENCE, Yonkers, N. Y.:
Gray Java Sparrow.

ROE, C. E., Chief Engineer, S.S. "El Seid," N. Y. C.:
Purple Gallinule.

ROGERS, Mrs. H., New York City:
White Rabbit.

ROHLIG, GEORGE, Passaic, N. J.:
Paradise Crane (2 specimens).

RONNE, MASTER ED. P., New York City:
Painted Turtle (3 specimens).

ROOT, MRS. E. A., New York City:
Roseate Cockatoo.

ROSE, R. C., New York City:
Horned Toad (2 specimens).

ROTHSCHILD, MRS. W. L., New York City:
Canary.

ROWN, MR., New York City:
1 Puma, 1 Ocelot.

RUEFF, MASTER EMIL, New York City:
Green-Winged Macaw.

RUNYON, E. W., New York City:
Rattlesnake (6 specimens).

RUSSELL, RICHARD H., Holly Springs, Pa.:
Queen Snake.

SATTERLEE, MRS. H. L., New York City:
Alligator.

SAUTER, MISS A., New York City:
Wood Tortoise.

SAXTON, FRED. G. and A. W. PERRIOR, Syracuse, N. Y.:
Screech Owl.

SCHADT, H. F., New York City:
Yellow-Fronted Amazon Parrot.

SCHAEFER, MARTIN, New York City:
2 Box Tortoises, 1 Painted Turtle.

SCHAEFER, RUDOLPH, F., New York City:
Java Monkey.

SCHINDLER, GEORGE, Newark, N. J.:
Ring-Tailed Monkey.

SCHULTZ, MASTER THEODORE, H., New York City:
Alligator.

SCHWARTZ, MRS. C., Westchester, N. Y.:
Yellow-Fronted Amazon Parrot.

SCOTT, MRS. WILLIAM, New York City:
Box Tortoise.

SECORD, NORMAN, Englewood, N. J.:
Alligator (2 specimens).

SEIFELDT, HANS, New York City:
Maryland Yellow-Throat.

SENZ, MASTER S., New York City:
Box Tortoise.

SHERMAN, EDWARD C., Moriches, L. I., N. Y.:
Bob-White (6 specimens).

SIGVELAND, MRS. ALMA, Brooklyn, N. Y. C.:
Owl or Moss Monkey.

SLACK, H., New York City:
Alligator.

SMITH, GERTRUDE E. and MARJORIE C., White Plains, N. Y.:
Alligator.

SMITH, MRS. LAURENCE, New Brighton, S. I., N. Y.:
Golden Pheasant.

STORMS, FRANK, New York City:
Flicker.

STUTSMAN, F. V., Twin Lake, Pa.:
Hog-Nosed Snake.

SULLIVAN, REGINALD, New York City:
Painted Turtle.

SUMERS, GEORGE, Yonkers, N. Y.:
White-Nosed Coati-Mundi.

TARTOUE, PIERRE, New York City:
Squirrel Monkey (2 specimens).

THOMAS, R. W., New York City:
Albino Milk Snake.

THOMPSON, W. B., Yonkers, N. Y.:
Opossum (2 specimens).

TIMME, E. F., Spring Valley, N. Y.:
Milk Snake.

TODD, MR., Tupper Lake, N. Y.:
Mink (2 specimens).

TUCKER, GEORGE R., Brattleboro, Vt.:
Raccoon.

VAN DYKE, R. B., New York City:
Gila Monster.

VASTENHOUW, JACOBUS, New York City:
Painted Turtle.

VONBUHREN, GEORGE, New York City;
2 Musk Turtles, 1 Painted Turtle.

VOORHEES, EDWARD, Belmar, N. J.:
Great Horned Owl.

WALCOTT, F. C., New York City:
1 Barred Owl, 1 Horned Owl.

WALTY, A. R., New York City:
American Sparrow Hawk.

WEIDENBUSCH, A., New Rochelle, N. Y.:
Raccoon.

WEISSE, B., Kingsbridge, N. Y.:
Alligator (2 specimens).

WETMORE, MRS. F. P., New York City:
Black-Poll Warbler.

WHIFFEN, EDWIN T., New Rochelle, N. Y.:
9 Water Snakes, 3 Massasaugas, 2 American Bitterns. Total, 14 specimens.

WHIPPLE, BERT, Fort Lee, N. J.:
Copperhead Snake (2 specimens).

WHITE, MRS. J. J., Brooklyn, N. Y. C.:
Red-Billed Hill-Tit.

WHITING, MRS. BUTLER,
European Red Squirrel.

WHITNEY, HARRY, New Haven, Conn.:
Cottonmouth Water Moccasin.

WIELAND, PAUL A., Hawthorne, N. J.:
Peahen.

WILLIAMS, ALLEN S., New York City:
2 Cook's Tree Boas, 1 Anaconda.

WOOLFALL, R. HERBERT, New York City:
Marmoset (2 specimens).

YOUNG, P. D., Jersey City, N. J.:
Barbary Turtle Dove (9 specimens).

ZACHMANN, MISS MILDRED, New York City:
Horned Toad.

ZOOLOGICAL SOCIETY OF PHILADELPHIA, Philadelphia, Pa.:
Agouti (2 specimens).

Miscellaneous List

MONTGOMERY, JAMES M., New York City:
Specimen Skin of Kangaroo Leather.

POTTER, WILSON, Philadelphia, Pa.:

Portfolio of 13 Original Photographs of Wild Moose on the Kenai Peninsula
(size 13 x 17 inches).

RICÉ, ARTHUR F., New York City:

3 Pictures of Elk in the Jackson Hole Country.

BENKARD, MRS. HARRY HORTON, New York City:

Collection of Aigrettes and Plumes for Bird Protection Exhibit.

MCILHENNY, EDWARD A., Avery Island, La.:

Specimens and Materials for Egret Group in Bird Extermination Exhibit.

SHIELDS, G. O., New York City:

1 Remington Automatic Shotgun and 1 Double-Barreled Flint-Lock Shotgun.

Gifts of Plants

HENDERSON, J., Westchester, N. Y.:

2 large Latania Palms.

NIEMAN, ROBERT, New York City:

1 large Euphorbia.

WISSMANN, F. DE R., Throggs Neck, N. Y.:

6 Baytrees. 2 *Dracaena indivisa*.

Gifts to the Library

AMERICAN MUSEUM OF NATURAL HISTORY, New York City:

Monographs of the American Museum of Natural History—A Review of the
Primates, by Daniel Giraud Elliot, Volumes I, II and III (2 copies).

BURLEIGH, GEORGE WILLIAM, New York City:

Reports of the Princeton University Expeditions to Patagonia—31 sections.

PHILLIPS, DR. JOHN C., Wenham, Mass.:

Catalogue of Indian Big Game—Hume Bequest—by R. Lydekker.

ROYAL UNIVERSITY OF UPPSALA, Uppsala, Sweden:

10 Swedish Zoological Papers, by various Authors. Results of the Swedish
Zoological Expedition to Egypt and the White Nile, 1901, by L. A.
Jagerskiold—Parts I, II, III and IV.

RUTHVEN, DR. ALEXANDER G., Ann Arbor, Mich.:

The Herpetology of Michigan, by Alexander G. Ruthven, Crystal Thompson
and Helen Thompson (Michigan Geological and Biological Survey Publica-
tion 10, Series 3). Memoranda Towards a Bibliography of the
Archaeology of Michigan, by Harlan I. Smith (Michigan Geological and
Biological Survey Publication 10, Series 3).

WINANS, WALTER, Kent, England:

Deer Breeding for Fine Heads, by Walter Winans, F. Z. S.

April 1, 1913, to April 1, 1914.

List of Gifts to the

National Collection of Heads and Horns

HAGENBECK'S SONS, CARL, Hamburg, Germany:

Gayal (*Bos frontalis*). Horns on Skull. Pir-Pinjal Markhor (*Capra fal-*
coneri cashmirensis). Horns.

PHILLIPS, DR. JOHN C., Wenham, Mass.:

Mrs. Gray's Waterbuck (*Cobus maria*). Horns.

ROTH, J. ERNEST, Pittsburgh, Pa.:

Asiatic Roebuck (*Capreolus pygargus*). Horns.

List of Gifts
TO THE AQUARIUM

January 1, 1913, to January 1, 1914.

AITKEN, MR. HARRY, Philadelphia, Pa.:
 Gopher Turtle.

BAILEY, MR. E. H., Cedar Rapids, Iowa:
 81 Painted Turtles, Snapping Turtle. Total, 82 specimens.

BARTO, MR. E. L., Brooklyn, N. Y. C.:
 Alligator.

BEARD, MR. S. M., Yonkers, N. Y.:
 Snapping Turtle (2 specimens).

BIDELL, MASTER FRANK, Brooklyn, N. Y. C.:
 Painted Turtle (2 specimens).

BREIVOGEL, MR. JOSEPH, New York City:
 Box Turtle.

BRIGGS, MRS. CORA D., Van Wert, Ohio:
 Red Salamander (2 specimens).

BROWN, MR. CLIVE, Copake, N. Y.:
 Snapping Turtle.

BURDA, MR. JOSEPH, New York City:
 Sea Horse.

BUTTERWORTH, MR. FRANK S., Jr., New Haven, Conn.:
 Diamondback Terrapin.

CARRUTHERS, CAPTAIN T. H., Newport News, Va.:
 Alligator.

CHILD, MR. F., Brooklyn, N. Y. C.:
 Snapping Turtle.

COLUMBIA UNIVERSITY, New York City:
 3 Tanks.

CONILLON, MR. JOHN F., Brooklyn, N. Y.:
 Sea Horse.

CROMER, MR. CHARLES D., New York City:
 Alligator.

CUMMINGS, MRS. C., New York City:
 Alligator.

CURTIS, MR. H., Brooklyn, N. Y.:
 Diamondback Terrapin.

DONALD, MRS. W. H., Dongan Hills, Staten Island, N. Y. :
 2 Alligators, 1 Spotted Turtle.

EDMONSTON, MR. A. J., Brooklyn, N. Y. C.
 Alligator.

FLOYD, MR. C. F., North White Lake, N. Y.:
 Snapping Turtle (2 specimens).

FREDERICKS, MR. CLYDE, New York City:
 Painted Turtle.

GROESCHEL, MR. J. J., West Orange, N. J.:
 Alligator.

GUTHIEL, MR. H. W., Bensonhurst, Brooklyn, N. Y. C.:
 Alligator (2 specimens).

HAGGIN, MRS. BEN ALI, New York City:
 Alligator.

HALL, MR. GEORGE E., New York City:
 Fancy Gold Fish.

HORE, MR. J., Brooklyn, N. Y. C.:
Sea Horse.

KENYON, MR. I., Brooklyn, N. Y. C.:
Alligator (2 specimens).

LAST, MRS. T., New York City:
Box Tortoise.

LAURITA, MR. CHARLES D., Long Island City, N. Y.:
Painted Turtle.

LEARY, MASTER WILSON M., New York City:
Alligator.

LEWIS, MR. E. J., New York City:
5 Painted Turtles, 2 Wood Turtles.

LIPSHITZ, MR. SAMUEL, New York City:
Box Tortoise.

LODER, MR. Z. T., Highland, N. J.:
Blue Lobster.

MACK, MR. WILLIAM, New York City:
Telescope Goldfish, Fantail Goldfish.

MINALDI, MRS. F., New York City:
Alligator (2 specimens).

NEW JERSEY FISH COMMISSION, Trenton, N. J.:
298 Yellow Perch, 1 Small-mouth Black Bass, 21 Large-mouth Black Bass,
16 Pickerel, 3 Common Roach, 1 Whitefish, 1 Sunfish. Total, 341
specimens.

NEW YORK CONSERVATION COMMISSION, Albany, New York:
Bull Frog (26 specimens).

NYE, MR. JOSEPH K., New Bedford, Mass.:
Porpoise (10 specimens).

OLSEN, MR. OLAF, New York City:
Land Hermit Crab.

ORENSTEIN, MR. HAROLD, Brooklyn, N. Y. C.:
Alligator.

OSTERMAN, MR. A., New York City:
22 Newts, 3 Green Turtles.

REAGAN, MR. EDWARD, Morristown, N. J.:
Alligator.

ROBERTS, MR. PETER, Key West, Florida:
Blue Parrotfish.

ROOT, MR. W. W., Brooklyn, N. Y. C.:
Sea Horse.

RYAN, MR. WILLIAM J., New York City:
Alligator.

SCHABER, MISS K., Brooklyn, N. Y. C.:
Painted Turtle (3 specimens).

SHARKEY, MR. EDWARD J., New York City:
Alligator.

STOCKBRIDGE, CAPTAIN M. G., Brooklyn, N. Y. C.:
Snail.

TOD, CAPTAIN DONALD, New York City:
Loggerhead Turtle (3 specimens).

TODD, MR. GEORGE B., Jersey City, N. J.:
Alligator.

TOWNSEND, DR. CHARLES H., New York City:
Diamondback Terrapin.

TRETHEWEY, MR. W. G., Toronto, Canada:
Hawksbill Turtle.

UXEDO CLUB, (through Mr. Edwin C. Kent), Tuxedo, N. Y.:
5,000 Steelhead Trout Eggs.

U. S. BUREAU OF FISHERIES, Washington, D. C.:

5,000 Rainbow Trout Eggs, 5,000 Brook Trout Eggs, 500,000 Whitefish Eggs, 1,000 Land-locked Salmon Eggs, 2,500 Silver Salmon Eggs, 800,000 Yellow Perch Eggs, 500,000 Pike Perch Eggs, 15,000 Black-spotted Trout Eggs. Total number of Fish Eggs received, 1,828,500.

VAUGHT, Mr. J. W., Canarsie, Long Island:
Gulf-weed Crab.

WHEELS, Mr. THOMAS H., New York City:
Cuban Turtle (2 specimens).

WEICKEN, Miss CLARA, New York City:
Box Tortoise.

WEISS, Mr. JOHN, New York City:
Alligator (2 specimens).

WILSON, Mr. JAMES T., Jr., Staten Island, N. Y.:

2 Snapping Turtles, 2 Spotted Turtles.

WORK, Mr. THEODORE K., Greenwood Lake, New York:
Musk Turtle.

NEW YORK ZOOLOGICAL SOCIETY, New York City:

6 Porpoises, 42 Blue Angelfishes, 20 Black Angelfishes, 2 French Angelfishes, 4 Spadefishes, 19 Nassau Groupers, 21 Red Groupers, 13 Black Groupers, 15 Yellow-Finned Groupers, 2 Green Morays, 3 Blue-Striped Grunts, 3 Yellow Grunts, 4 Gray Grunts, 22 White Grunts, 1 Black Grunt, 59 Porkfishes, 19 Triggerfishes, 24 Queen Triggerfishes, 3 Ocean Triggerfishes, 10 Margate, 2 Blue Tang, 3 Surgeon-Fishes, 1 Batfish, 1 Red Parrotfish, 18 Blue Parrotfishes, 5 Rainbow Parrotfishes, 2 Parrotfishes, 4 Grasby, 14 Spot Snappers, 15 Gray Snappers, 1 Red Snapper, 3 Dog Snappers, 1 Beau Gregory, 3 Trunkfishes, 4 Cowfishes, 2 Scamp, 6 Squirrelfishes, 12 Yellow Tails, 10 Butterflyfishes, 11 Schoolmasters, 1 Redfish, 2 Jolt-Head Porgies, 7 Porgies (2 varieties), 7 Southern Porgies, 1 Grass Porgy, 1 Rock Hind, 13 Red Hind, 1 Southern Ray, 1 Pudding Wife, 5 Jewfishes, 7 Leather Jackets, 1 Shark Sucker, 1 Sailor's Choice, 2 Nurse Sharks, 1 Cobia, 1 Scorpion Fish, 1 Lane Snapper, 1 Chubb, 4 Sea Catfishes, 3 Sheepshead, 54 Croakers, 11 Hogfishes, 31 Muttonfishes, 1 Southern Puffer, 295 Sea Horses, 1 Drumfish, 12 Spiny Boxfishes, 4 Sand Sharks, 30 Weakfishes, 14 Spots, 2 Sole, 14 Blackfishes, 32 Toadfishes, 18 Mossbunkers, 1 Threadfish, 3 Striped Bass, 15 Fluke, 4 Puffers, 4 Bluefishes, 7 Mullets, 11 Bergall, 1 Slippery Dick, 1 Natica, 1 Yellow Mackerel, 1 Orange Filefish, 1 Sturgeon, 2 Filefishes, 3 Pompano, 10 Skates, 5 Prickly Skates, 3 Barndoor Skates, 1 Cow-Nosed Ray, 23 Sea Robins, 10 Butterfishes, 12 Dogfishes, 1 Blue Shark, 2 Bream, 15 Sea Bass, 13 Moonfishes, 27 Slimy Toadfishes, 3 Herring, 89 Sculpins, 13 Pigmy Sculpins, 4 Ladderfishes, 1 *Neomanenias ambiguus*, 3 Giant Salamanders, 2 Proteus, 4 Matamata Turtles, 4 Side-Necked Turtles, 167 Fiddler Crabs (2 varieties), 3 Prawn, 5 Mantis Shrimp, 13 Horseshoe Crabs, 3 Lobsters, 11 Spiny Lobsters, 6 Muhlenberg Turtles, 6 Spotted Turtles, 122 European Turtles (4 varieties), 13 Land Hermit Crabs, 2 Loggerhead Turtles, 4 Stone Crabs, 9 Sea Ravens, 33 Eelpouts, 1 Hake, 5 Anglers. Total, 1,692 Specimens.

Gifts to the Aquarium Library

AMERICAN MUSEUM OF NATURAL HISTORY, New York City:
Annual Reports and Journals.

BROOKLYN INSTITUTE OF ARTS AND SCIENCES, Brooklyn, N. Y. C.:

Annual Report and "Museum News."

BUREAU OF FISHERIES (through Hon. George M. Bowers, Commissioner), Washington, D. C.
Reports and Bulletins for 1913.

ILLINOIS STATE LABORATORIES OF NATURAL HISTORY (through Dr. S. A. Forbes, Director), Urbana, Illinois:
Publications for 1913.

JENNINGS, Mr. G. E., New York City:
The Fishing Gazette.

SMITHSONIAN INSTITUTION (through Dr. C. D. Wolcott, Secretary), Washington, D. C.:
Reports and publications for 1913.

WINGATE, Mr. HAROLD, New York City:
Proceedings of the Philadelphia Academy of Natural Sciences.

Exchanges

BOSTON AQUARIUM, Boston, Mass.:
10 Hybrid Trout, 250 Sticklebacks.

DETROIT AQUARIUM, Detroit, Michigan:
2 Sturgeon, 3 Muskallunge, 11 Common Suckers, 5 Pike Perch, 4 Pike, 21 Rock Bass, 51 Bullheads, 21 Mud Puppies, 9 Gar Pike, 10 Sheepshead, 73 Goldfishes, 1 Dogfish, 7 Sauger Pike, 12 Yellow Perch, 2 Banded Sunfishes. Total, 239 Specimens.

PHILADELPHIA AQUARIUM, Philadelphia, Pa.:
120 Yellow Perch, 12 White Perch, 10 Black Bass, 8 Rock Bass, 6 Crappie, 2 Red Horse Suckers. Total, 158 Specimens.

COMBINATION OF NARCISSUS AND RHODODENDRONS



CHARTER
OF THE
NEW YORK ZOOLOGICAL SOCIETY
CHAPTER 435, LAWS OF 1895.

AN ACT to incorporate the New York Zoological Society and to provide for the establishment of a zoological garden in the city of New York.
As amended by Chapter 146 of the Laws of 1902; and by Chapter 240 of the Laws of 1910.

See Chapter 432 of the Laws of 1900.

See Charter of the City of New York, Section 626 of the Laws of 1901.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Charles A. Dana, Oswald Ottendorfer, Andrew H. Green, William H. Webb, Henry H. Cook, Samuel D. Babcock, Charles R. Miller, George G. Haven, J. Hampden Robb, Frederick W. DeVoe, J. Seaver Page, Rush C. Hawkins, David James King, Wager Swayne, Charles A. Peabody, Jr., Charles E. Whitehead, Charles R. Flint, Samuel Parsons, Jr., Mornay Williams, Henry E. Gregory, Isaac W. Maclay, Isaac Rosenwald, Hugh N. Camp, Andrew D. Parker, Cornelius Van Cott, William F. Havemeyer, Frederick Shonnard, William W. Thompson, Alexander Hadden, Edward L. Owen, John H. Starin, Rush S. Huidekoper, William W. Goodrich, Albert H. Gallatin, Frederick S. Church, Edward C. Spitzka, Robert L. Niles, Madison Grant, C. Grant La Farge, William Van Valkenburg, and such other persons as may, under the provisions of its by-laws, become members of the corporation hereby created, are hereby created a body corporate and politic, by and under the name of the New York Zoological Society.

SEC. 2. Said corporation shall have power to establish, maintain and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold, and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

SEC. 3. The managers of said corporation shall have power to make and adopt by-laws for the management and government of its affairs and business, for the admission, suspension, and expulsion of its members, and for the terms and conditions of membership; to prescribe the number and mode of election of its officers; to define their duties; to provide for the safe-keeping of its property, and from time to time to alter and modify its by-laws.

SEC. 4. The affairs and business of said corporation shall be managed and controlled by a board of managers, the number of whom shall be prescribed by the by-laws. The first board of managers shall be divided by lot into three classes, equal in number, one of which classes shall hold office for one year, another for two years, and the other for three years; and all persons elected to be managers at any subsequent election shall hold office for three years, and until others are elected in their stead. There shall be a president, two vice-presidents, treasurer and secretary, to be elected by the board of managers annually, who shall hold office until others are elected in their stead. The first meeting under

this act may be held at any time upon a notice of five days, signed by any five of the incorporators named in the first section of this act, fixing a time and place for such meeting, a copy whereof shall be mailed to each of said incorporators at his usual post-office address, and twelve of such incorporators shall be a quorum for the purpose of organization, adoption of by-laws, and election of officers. No manager of said corporation shall be interested, directly or indirectly, in any contract concerning its property or affairs.

SEC. 5. Said corporation may raise money by the issue of its bonds, secured by a mortgage on any or all of its property not acquired from said city or state.

SEC. 6. Said corporation may take, purchase, and hold real and personal estate necessary for the purpose of its incorporation, and shall possess the general powers and be subject to the restrictions and liabilities prescribed in Article two of Chapter 23 of the Consolidated Laws entitled "General Corporation Law," being chapter 28 of the Laws of 1909.

SEC. 7. The commissioners of the sinking fund of the said city are authorized in their discretion to allot, set apart, and appropriate for the use of said corporation, any of the lands belonging to said city north of One Hundred and Fifty-fifth street, but not in the Central Park, and such appropriation may be revoked if, after the expiration of five years from the passage of the act, a zoological garden is not established thereon; said grounds thus set apart and appropriated shall be used for no purpose whatsoever except those aforesaid. As soon as any lands are set apart the Mayor of the said city of New York, and the President of the Department of Parks of said city, shall become and be ex-officio members of the board of managers of said corporation. If at any time the animals now composing the menagerie at Central Park shall be removed therefrom by the authorities having charge thereof, said authorities may make an arrangement with the incorporators named in this act or the corporation formed by them for leasing or sale of such animals to such incorporators or corporation, and said incorporators or corporation shall have a preference over any other person or corporation in respect thereto upon the same terms which said authorities could make with any such other person or corporation, or upon such other terms as to such authorities may seem proper, but nothing herein provided shall be construed as giving the commissioners of the Department of Public Parks authority to sell, lease, transfer, or in any other wise dispose of said animals or other property connected with or belonging to said menagerie.

SEC. 8. Admission to the said gardens shall be free to the public for at least four days, one of which shall be Sunday, in each week, subject to such rules and regulations as shall be prescribed by said corporation.

SEC. 9. This act shall take effect immediately.

NEW YORK ZOOLOGICAL SOCIETY

AND THE

NEW YORK AQUARIUM

CHAPTER 441. LAWS OF 1902.

AN ACT to authorize a further appropriation to the New York Zoological Society, for the support of the New York Aquarium.

As amended by Chapter 239 of the Laws of 1910.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Chapter four hundred and forty-one of the laws of nineteen hundred and two, entitled "An act to authorize a further appropriation to the New York Zoological Society for the support of the New York Aquarium," is hereby amended to read as follows:

SECTION 1. The Board of Estimate and Apportionment of the City of New York may annually, in its discretion, include in the budget for the then next ensuing financial year, in addition to any sum or sums which may be appropriated for the adequate support and maintenance of the New York Zoological Park or gardens, situated in the borough of the Bronx, and administered and controlled by the New York Zoological Society, a further sum or sums, in its discretion, for the use of the said New York Zoological Society, provided, however, that the additional appropriation hereby authorized shall be made only in case an agreement is entered into between the said New York Zoological Society and the city of New York, acting by its Board of Estimate and Apportionment for the adequate keeping, maintenance, extension, preservation and exhibition of the building and approaches thereto and collection of aquatic animals and plants contained therein, known as the New York Aquarium, situated in the Battery park in the Borough of Manhattan in said city, and also for furnishing opportunities for study, research and publication in connection with said collections, which contract the said Board of Estimate and Apportionment is hereby expressly authorized, in its discretion, to make upon such terms and conditions as may be agreed upon with the said New York Zoological Society, and which contract shall also provide how the duty of the commissioner of parks for the boroughs of Manhattan and Richmond in respect to maintaining the said aquarium now imposed upon him by law shall be performed.

SEC. 2. This act shall take effect immediately.

BY-LAWS
OF THE
NEW YORK ZOOLOGICAL SOCIETY
AMENDED TO JAN. 21, 1913.

ARTICLE I.

MEETINGS OF THE SOCIETY.

SEC. 1. The office and place of business of the New York Zoological Society shall be in the City of New York, unless otherwise ordered.

SEC. 2. The Society shall hold its annual meeting for the election of Managers, and other business, on the second Tuesday of January, or such day thereafter during the month of January to which said annual meeting shall adjourn.

SEC. 3. Special meetings of the Society shall be called by the Secretary, upon the request of the President or the Chairman of the Executive Committee, or at the written request of ten members.

SEC. 4. Notices of all meetings shall be mailed to each member of the Society at least three days before such meeting.

SEC. 5. At meetings of the Society twenty members shall constitute a quorum.

SEC. 6. The order of business shall be as follows:

1. Roll Call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of the Director of the Zoological Park.
7. Report of Director of the Aquarium.
8. Election of Managers.
9. Communications.
10. Miscellaneous business.
11. Reports and resolutions.

ARTICLE II.

BOARD OF MANAGERS.

SEC. 1. The Board of Managers shall consist of thirty-six members, together with the Mayor of New York and President of the Park Board, or Commissioner for the Bronx, who shall be members *ex-officio* of the Board.

SEC. 2. Nineteen Managers shall constitute a quorum, but ten Managers may transact current business, and adjourn, subject to the subsequent approval of a meeting at which a quorum shall be present.

SEC. 3. The Board of Managers shall hold an annual meeting on the third Tuesday of January, or on such day thereafter to which said annual meeting shall adjourn. Regular meetings of the Board may also be called by the Secretary on the third Tuesdays of October and April upon the request of the President or Chairman of the Executive Committee. Special meetings of the Board shall be called at any time by the Secretary, upon the request of the President or Chairman of the Executive Committee, or at the written request of five Managers.

SEC. 4. Notices of meetings of the Board shall be mailed to each Manager at least three days before such meetings.

SEC. 5. The successors to the outgoing class of Managers shall be elected by the Society at its annual meeting, but vacancies in the board may be filled for the unexpired term by the Board of Managers, or by the Executive Committee.

SEC. 6. A Nominating Committee shall be annually appointed by the Executive Committee, and shall consist of three members of the Society at large, who shall nominate and post ten days before the annual election the names of twelve persons to succeed the outgoing class of Managers in a conspicuous place in the office of the Society.

SEC. 7. No person shall be eligible for election to the Board of Managers, except to fill vacancies, unless his name shall have been posted as a candidate by such committee, or by not less than ten members, in writing, in a conspicuous place in the office of the Society ten days before the annual election. All candidates for election as Managers must be Life Members, Patrons, Associate Founders, or Founders of the Society.

SEC. 8. Any Manager who shall fail to attend three consecutive meetings of the Board, unless excused by a vote of the Board, shall cease to be a Manager.

SEC. 9. The Board of Managers shall at its annual meeting elect a President, two Vice-Presidents, a Secretary, and Treasurer, who shall hold office for one year, or until their successors are elected. The President, Vice-Presidents, and Treasurer shall be members of the Board.

SEC. 10. The Director of the Zoological Park, the Director of the Aquarium, and all other persons employed by the Society, shall be appointed by the Board or by the Executive Committee, and shall hold office during the pleasure of the Board.

SEC. 11. The Board shall, at its annual meeting, elect an Executive Committee and Auditing Committee, which shall hold office for one year, or until their successors are elected. The Board of Managers and the Executive Committee shall also have authority to appoint such other Committees or officers as they may at any time deem desirable, and to delegate to them such powers as may be necessary.

SEC. 12. The order of business of the meetings of the Board shall be as follows:

1. Roll Call.
2. Reading of minutes not previously read.
3. Report of Executive Committee.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of Auditing Committee.
7. Report of Director of Zoological Park.
8. Report of the Director of the Aquarium.
9. Election of Officers.
10. Election of Committees.
11. Election of new members.
12. Communications.
13. Miscellaneous business.

SEC. 13. All reports and resolutions shall be in writing, and the ayes and nays may be called on any resolution at the request of one Manager.

SEC. 14. Whenever the funds of the Society shall permit, the Board of Managers or the Executive Committee may award medals or other prizes for meritorious work connected with the objects of the Society.

ARTICLE III.

OFFICERS.

SEC. 1. The officers of the Society shall consist of a President, two Vice-Presidents, a Treasurer, a Secretary, and a Director of the Zoological Park. These Officers, with the exception of the Director, shall be elected at the annual meeting of the Board of Managers, but any vacancy may be filled for an unexpired term by the Board of Managers, or by the Executive Committee, until the next annual election.

SEC. 2. The President shall preside at all meetings of the Board and of the Society, and shall be *ex-officio* a member of the Executive and Auditing Committees.

SEC. 3. The Vice-Presidents shall, in the absence of the President, perform his duties and possess his powers, acting in the order of their election.

SEC. 4. The Treasurer shall receive, collect and hold, subject to the order of the Board of Managers, or the Executive Committee, all dues, subscriptions, warrants from the City, fees and securities. He shall pay all bills as ordered by the Board of Managers or the Executive Committee, and shall report to the Society at its annual meeting, and to the Board of Managers at all regular meetings, and to the Executive Committee at each meeting. He shall keep all moneys and securities in some bank or trust company to be approved by the Board of Managers or Executive Committee. The books of the Society shall at all times be open to the inspection of the Managers.

SEC. 5. The Secretary shall be a salaried officer of the Society. He shall be present, unless otherwise relieved by the Board or Executive Committee, at all meetings of the Society, of the Board, and of the Standing Committees. He shall keep a careful record of all proceedings, shall have the custody of the seal, archives and books, other than books of account, and shall conduct the correspondence of the Society. He shall issue all notices and tickets, and shall perform such other duties as the Board may direct. He shall be a member *ex-officio* of the Executive, Aquarium, and Auditing Committees, and of the Scientific Council.

SEC. 6. The Director of the Zoological Park shall be elected annually by the Executive Committee at a salary to be determined by said Committee, and shall hold office until removed or his successor chosen by said Committee. He shall be the responsible administrative officer of the Park, and shall recommend to the Executive Committee candidates for the various positions in the Park. He shall also perform all such other duties in connection with the business, scientific, and literary administration of the Society as may be assigned to him by the Executive Committee.

SEC. 7. The Director of the Aquarium shall be elected annually by the Executive Committee and shall hold office until removed or his successor is chosen by said Committee. He shall be the responsible administrative officer of the Aquarium, and shall recommend to the Executive Committee all candidates for positions in the Aquarium. The director of the Aquarium shall be *ex-officio* a member and Chairman of the Aquarium Committee. He shall perform such other duties in connection with the Aquarium as may be assigned to him by the Executive Committee.

ARTICLE IV.

COMMITTEES.

SEC. 1. There shall be two standing committees, the Executive Committee and the Auditing Committee, which shall hold office for one year or until their successors are elected.

SEC. 2. The Executive Committee shall consist of seven Managers, together with the President and Secretary of the Society *ex-officio*. Four members shall constitute a quorum, and all meetings shall be called by the Chairman. The Executive Committee shall fill all vacancies in its own number and shall have the full powers of the Board of Managers, except so far as such delegation of power may be contrary to law.

SEC. 3. The Executive Committee shall have the control and regulation of the collections, library, and all other property of the Society, and shall have power to purchase, sell, and exchange specimens and books, to employ and control all officials and employees of the Society, Park, and Aquarium, and generally to carry out in detail the directions of the Board of Managers and the terms of any contract between the City, or Park Board, and the Society.

SEC. 4. All the rules and regulations for the examination of applicants for the various positions in the Park and Aquarium shall be made or approved by the Executive Committee.

SEC. 5. The Executive Committee may regulate the auditing and payment for all current accounts.

SEC. 6. The Executive Committee shall annually appoint an Aquarium Committee, whose duties and powers are set forth in Section 11 of Article IV of these By-Laws.

SEC. 7. The Executive Committee shall annually appoint a Nominating Committee, whose duties and powers are set forth in Sections 6 and 7, Article II, of these By-Laws.

SEC. 8. It shall also appoint a Scientific Council, whose powers and duties are set forth in Section 2 of Article V of these By-Laws.

SEC. 9. The Committee shall make a written report at each regular meeting of the Board of Managers.

SEC. 10. The Auditing Committee shall consist of three regular members of the Society, in addition to the President and Secretary, members *ex-officio*, and vacancies shall be filled by the Executive Committee. It shall be the duty of the Auditing Committee to audit, annually, the accounts of the Treasurer, of the Director of the Zoological Park, and of the Director of the Aquarium, and any other accounts of the Society, and shall report to the Board of Managers at its annual meeting.

SEC. 11. The Executive Committee shall annually appoint an Aquarium Committee, not to exceed eight members of this Society, who shall hold office until their successors are chosen. All vacancies shall be filled by the Executive Committee. The Director of the Aquarium shall be *ex-officio* a member and the Chairman of the Aquarium Committee, and such Committee may vest in him any or all of its powers. The Chairman of the Executive Committee and the Secretary of the Society shall also be *ex-officio* members of the Aquarium Committee. Three members shall constitute a quorum. The Executive Committee may delegate to the Aquarium Committee such powers as it may deem proper.

ARTICLE V.

SCIENTIFIC COUNCIL.

SEC. 1. The Executive Committee shall annually appoint a Scientific Council of not more than ten members, and shall fill all vacancies. Members of the Council shall hold office until their successors are appointed.

SEC. 2. The duties of the Council shall be to act as an advisory board in all matters pertaining to the scientific administration of the Society, and especially as to the scientific features of the Park, the promotion of zoology by publications and otherwise, and the preservation of the native fauna of America.

SEC. 3. Four members, including the Chairman, shall constitute a quorum. The Chairman shall be elected annually by the Council. The Chairman of the Executive Committee and the Secretary of the Society shall be members *ex-officio* of the Council.

ARTICLE VI.

MEMBERS.

SEC. 1. The present members and such others as shall become associated with them, under the conditions prescribed by the By-Laws, shall be members of this Society as long as they shall comply with the By-Laws.

SEC. 2. Members failing to comply with these By-Laws, or for other good and sufficient cause, may be expelled from the Society by the Executive Committee.

SEC. 3. Candidates for membership shall be proposed and seconded by members of the Society. The name, occupation, and place of residence of every member as proposed shall be submitted for election to the Board of Managers or the Executive Committee, and such person, when elected, shall become a member upon payment of the annual dues, or of the fees as prescribed below.

SEC. 4. There shall be a class known as Fellows, which shall consist of members of the Society who have rendered marked services to science, and shall be chosen by the Executive Committee. The privileges of Fellows shall be in all respects the same as those of regular members of the Society, but they shall be exempt from the payment of annual dues.

SEC. 5. The annual dues shall be ten dollars, payable in advance, on the first day of May of each year, but the Executive Committee may remit the dues for the current year in the case of members elected between January 1st and May 1st of each year. The classes of membership shall be as follows:

SEC. 6. The payment of \$200 at one time shall constitute any member a Life Member.

A member who has paid annual dues for a period of five years may thereafter, at any time, upon the payment of the difference between the amount of dues already paid and \$200, become a Life Member, but such payment shall be not less than \$100.

SEC. 7. The payment of \$1,000 at one time, or in the case of a Life Member, of \$800, shall constitute any member a Patron.

SEC. 8. The payment of \$2,500 at one time, or in the case of a Patron of \$1,500, or of a Life Member of \$2,300, shall constitute any member an Associate Founder.

SEC. 9. Any member who shall donate to the Society \$5,000, or property of equal value, or any Associate Founder who shall donate \$2,500, or any Patron who shall donate \$4,000, may be elected by the Board of Managers or Executive Committee a Founder.

SEC. 10. Any member who shall have donated to the Society ten thousand dollars (\$10,000), or its equivalent, may be elected by the Board of Managers or the Executive Committee a Founder in Perpetuity. Such Founder in Perpetuity shall have the power to designate by a last will and testament his successor, who shall thereupon be entitled to all the rights and privileges of the original Founder in Perpetuity, including the right of designating in turn his successor.

SEC. 11. Any member who shall have donated to the Society \$25,000, or its equivalent, may be elected by the Board of Managers, or the Executive Committee, a Benefactor. Benefactors shall have the rights and privileges of a Founder in Perpetuity.

SEC. 12. Persons who have rendered marked service in the science of zoology or natural history may be elected Honorary Members, but not more than three such Honorary Members shall be elected in any one calendar year.

SEC. 13. A resident member who shall have rendered marked scientific or professional services to the Society in any branch of its work may be elected by the Executive Committee a Life Member, Patron, Associate Founder, or Founder. A resident of New York who shall have rendered marked service in zoology or natural history may be elected by the Executive Committee a Permanent Fellow.

SEC. 14. Non-residents who communicate valuable information to the Society, or who have rendered marked service in the science of zoology or natural history, may be elected Corresponding Members.

SEC. 15. Benefactors, Founders in Perpetuity, Founders, Associate Founders, Patrons, Life Members, Honorary Members, Permanent Fellows, Fellows, and Corresponding Members shall be exempt from annual dues.

ARTICLE VII.

PRIVILEGES OF MEMBERS.

SEC. 1. A member's ticket admits the member and his immediate family to the Park on reserve days, and to all lectures and special exhibitions, and may be used by the member's immediate family, and shall be good for the current year.

SEC. 2. Admission tickets to the Park and Aquarium on reserve days are issued to members for distribution, and are good for the current year.

SEC. 3. Each member of the Society is entitled annually to a member's ticket and to ten admission tickets.

SEC. 4. Each member shall also receive one copy of the catalogue or handbook, the report and official publication of the Society, and shall have all the privileges of the Library and Members' Building.

SEC. 5. No member shall be entitled to the privileges enumerated in this Article unless his annual dues shall have been paid.

SEC. 6. The Life Members shall have all the privileges of members and ten additional admission tickets.

SEC. 7. Benefactors, Founders in Perpetuity, Founders, Associate Founders and Patrons shall have all the privileges of Life Members, and shall in addition receive copies of all scientific works published by the Society.

SEC. 8. Any member who shall fail to pay his annual dues within three months after the same shall have become due, and after notice of thirty days, by mail, shall cease to be a member of the Society; subject, however, to reinstatement by the Board of Managers or Executive Committee for good cause shown.

SEC. 9. Any person elected to membership who shall fail to qualify within three months after notice of his election shall be considered to have declined his election; but such term may be extended by the Board of Managers, or Executive Committee.

ARTICLE VIII.

FINANCES.

SEC. 1. The fiscal year of the corporation shall be the calendar year commencing January 1st and ending December 31st.

SEC. 2. Neither the Society nor any of its Managers or Officers shall contract any debt which, with existing debts, shall exceed in amount the funds then in the Treasury, except to meet expenditures for which the City is liable, and for which the Society will be reimbursed by warrants from the Comptroller's office.

ARTICLE IX.

AMENDMENTS.

SEC. 1. Amendments to these By-Laws may be proposed, in writing, at any meeting of the Board of Managers, and adopted by unanimous consent of the Managers present, or if such proposed amendment shall fail to receive unanimous consent, the Secretary shall, with the notices of the next meeting, send a copy of it to each Manager and state that it will be brought up for action at such meeting, when it may be passed by a majority vote.

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